the Infantry school quarterly

the magazine for infantrymen

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1955

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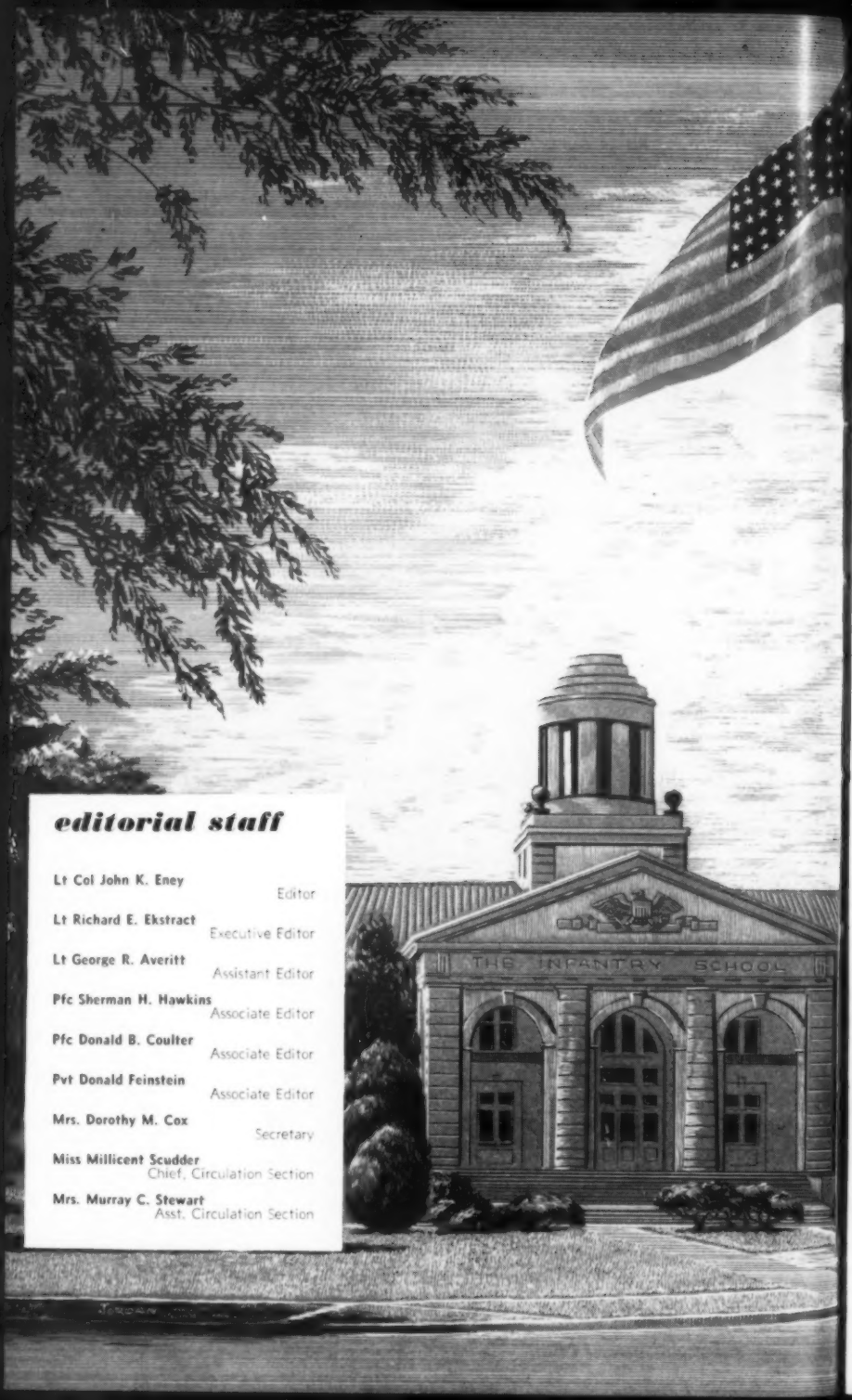

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THE

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volume 45 number 2 april 1955

the infantry school

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letters

Gage d'amour!

Park Ridge, Ill.

Sir:

. . . my check for a three-year subscription is enclosed.

The Infantry School Quarterly stands head and shoulders above all other publications in its field.

Richard E. Ehrhardt
1st Lt

Curtain Call

"The New Operation Order" (July '54) was recently reprinted by the 296th Regimental Combat Team (Camp Losey, Puerto Rico). The regimental commander, Colonel Frank R. Harrison, had a copy distributed to every commissioned and non-commissioned officer in his command.

Remember—if you want to reprint an *Infantry School Quarterly* article, you must, like the 296th RCT, get permission from us first.—Editor.

Correction!

Dept. of the Army
Office of The Surgeon General

Dear Sir:

Reference "What's New," October '54, pg. 54, under the heading "Tourniquets." The statement "This is based on the assumption that all casualties receiving tourniquet treatment will be in the hands of Army Medical Service in a matter of a few hours" is erroneous.

The present practice of leaving a tourniquet in place until removed by Army Medical Service personnel is not based on the quoted assumption, but is the result of a careful study and evaluation of the problem within the Office of The Surgeon General and by the Committee on Surgery of the National Research Council. Once a tourniquet has been applied, it should not be released (except in extreme emergency) by any individual except a medical officer, who is prepared to control the hemorrhage by other means and to replace the blood volume adequately. This is preferably done at the first medical installation.

R. G. Prentiss, Jr.
Colonel, M.C.
Executive Officer

Proof that assumptions are not to be lightly made. Our thanks to Col Prentiss.—Editor.

Technical Knockout

Palmyra, Pa.

Sir:

Isn't the filler "Did You Know," page 69 (Oct '54), a lift from pages 190-191 of my "Non-Com's Guide (10th Ed.)?

C. O. Kates

Our apology. Full credit for this item should go to Mr. Kates instead of Maj Stamey.—Editor.

Reference Material

Sir:

The Infantry School Quarterly should be a monthly! Have used it very often as a reference for my National Guard classes.

J. H. Penrose
Major

. . . to the editor

Matter of Fact

Fort Knox, Ky.

Sir:

"Star Unit. . . . The 134th Infantry" (Oct '54). Excellent! . . . But what about the statement, "The 134th Infantry of the U. S. 34th Infantry Division is told to clear the way?" During the period referred to (July '44), the 134th Infantry was organic to the 35th Division. The 34th Division was in Italy at the time. How about giving the 35th Division credit?

Clarence W. Bain
Major, Armor

A recheck of the 134th's unit history substantiates Major Bain's statement. Our researcher has been declared *non compos mentis*.—Editor.

Turn About

Tulsa, Oklahoma

Sir:

My men . . . will soon be converting to truck company MOS's. Where can I get the information needed to prepare them for this turn about? For example: What should they be told to do in the event of an ambush?

Can you help?

R. R. Winters
S/Sgt, USMCR

We had our experts prepare a lengthy study for Sgt Winters on the subject requested. It was dispatched only a few weeks after his request reached us. Remember—if you have a training problem —write us.—Editor.

The Hiatus Bridged

5648 Fulton St.
San Francisco 21, Calif.

Sir:

. . . I would like to take this opportunity to add my "well done" to all concerned with the production of this magazine. As a National Guardsman who cannot seem to find the time to attend the resident course, the *Quarterly* helps to fill in the gap between Extension Course book-learning and the learning-by-doing under experienced supervision. The *Quarterly* also provides an excellent source of information to bring up to date the training we pass on to our troops.

The addition of the Quiz and "What's New" items, make for more interest and are never slighted.

Benjamin N. Sawtelle, Lt
154 Mohawk
Cohoes, N. Y.

Meet The Artist

Cpl Charles R. Pollock, whose versatility with brush and palette is displayed on our front and back covers—is no novice. He won a scholarship to Pratt Institute (Art) and graduated in 1953 as top man in his class.

During college years he free lanced and, more recently, has been teaching art. We predict a bright future for this young artist and believe that it takes real talent to make a combat boot come to life.

Editor's Page

Dear Reader:

THE ROAD that leads into tomorrow is the one the Infantryman travels today. This is true and history verifies it.

The Infantryman rarely has an opportunity to see the "big picture" in combat. He is too preoccupied with the next objective; his horizon is often limited to the earth he holds, bodily contact with the enemy . . . heat and cold. He cannot escape the forces of nature or of man.

Whether he travels on jungle paths, cart-rutted trails or macadam highways, he travels toward tomorrow. Toward victory that spells freedom. The enslaved are not free until *he* arrives. Cities are not safe until *he* enters their gates.

He is, essentially, an unpretentious person—unimpressed with the magnitude of his role; eager only to perform it well. But history is his spokesman.

In this era of mechanization, neither the Infantryman nor his role can be taken for granted. Man will always remain the master—machines the servant. Since the individual Infantryman holds victory in his hands, it is well for us to remember that esprit, like patriotism, thrives on pride.

The Editor

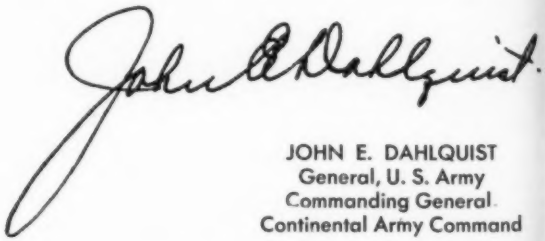
Near Bastogne, Belgium, 27 December 1944: An Infantryman returns to the front.

TO ALL INFANTRYMEN:

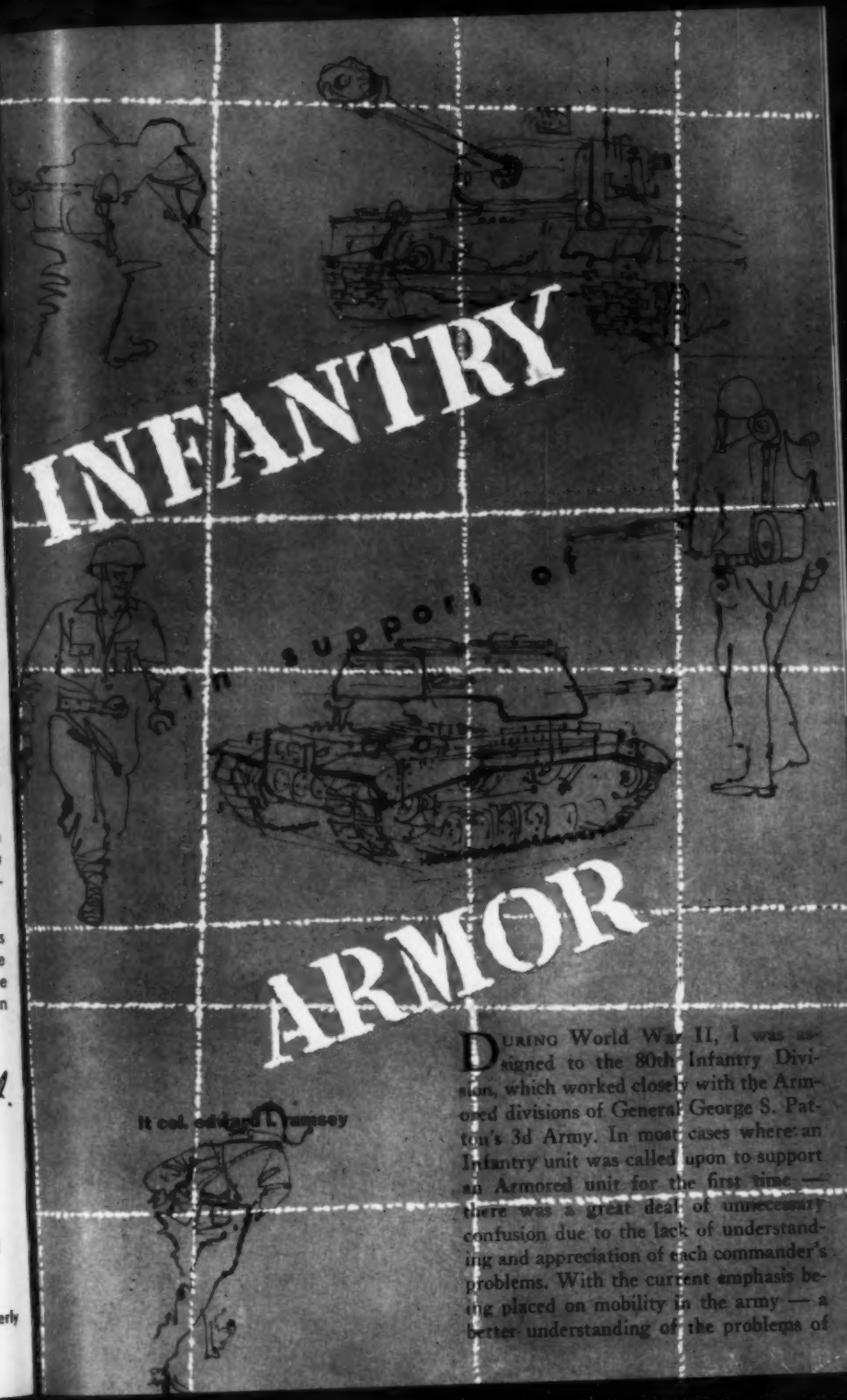
The United States Infantry celebrates its 180th anniversary on 15 June of this year. I welcome the opportunity to greet you Infantrymen everywhere in the world on the occasion of this anniversary through the pages of your magazine, *The Infantry School Quarterly*.

The nation owes much to its Infantrymen of every generation. In every war, on every battlefield, they have borne the major portion of the burden of combat. From the Bridge at Concord in 1775, to the mountains of Korea in 1953, American Infantrymen have left their blood and their mark.

The Infantryman is proud — and should be proud — of his past accomplishments and of his present stature. It takes strength, stamina, will power, brains, and courage to be a doughboy. The Infantry is still the Queen of Battle — where it stands marks the farthest point of success — the battlefield that we command is the part the Infantryman controls.



JOHN E. DAHLQUIST
General, U. S. Army
Commanding General
Continental Army Command



Lt. Col. Edward L. Ramsey

DURING World War II, I was assigned to the 80th Infantry Division, which worked closely with the Armored divisions of General George S. Patton's 3d Army. In most cases where an Infantry unit was called upon to support an Armored unit for the first time — there was a great deal of unnecessary confusion due to the lack of understanding and appreciation of each commander's problems. With the current emphasis being placed on mobility in the army — a better understanding of the problems of

"A BETTER UNDERSTANDING OF BOTH SIDES OF

Infantry in support of Armor is needed. Are you as familiar as you would like to be with Infantry-Armor operations?

Most Infantrymen who have kept up-to-date on Armored-Infantry operations are aware of the present doctrine involving an Armored penetration[1] One of three techniques should be used. In order of official preference these are: Armor passing through Infantry after the penetration has been completed; Armor committed to hasten the penetration before it has been completed; and Armor making the penetration in cooperation with other units. This last technique should be avoided whenever possible because of probable losses of materiel which would reduce effectiveness in the ensuing exploitation.

The main offensive task of Armor is exploitation. Armor's speed, maneuverability and shock action make it especially effective in seizing deep objectives and making long ground gains. The Armor exploitation principle is to reach the final objective with maximum force in the shortest possible time. Enemy troops and strong points are bypassed unless they interfere directly with the accomplishment of the mission. Follow-up troops are needed to destroy these bypassed or blocking enemy forces.

Armor's organic Infantry is insufficient to carry out these tasks and still complete its exploitation misison.[2] World War II proved to me that a reinforced Infantry regiment is well suited to fill this gap.

Existing Doctrine

What is the existing doctrine concerning the reinforced Infantry regiment in support of operations of this sort? Field Manual 100-5, *Field Service Regulations, Operations,* implies the suitability of a reinforced regiment for this task in the following statement: "Infantry units completely motorized are suited especially for the close support of Armored units." Field Manual 17-100, *Armored Division and Combat Command,* which contains the latest and most comprehensive coverage of the problem, offers only a general outline of the tasks which Infantry follow-up troops would perform. Field Manual 7-40, *The Infantry Regiment,* doesn't treat the subject at all. It does contain, however, doctrine and techniques for standard Infantry offensive tactics which, with modifications, could be applied to this sort of action.

The reinforced Infantry regiment will normally be strong enough to support Armor in these movements. In extremely fluid situations involving pursuit of a large enemy force or reduction of many enemy strongpoints, however, a larger force may be required. For example, the 3d Armored Division used two Infantry divisions from the Seine River to Germany in following up a rapid and far-flung exploitation of the enemy defense sector.

Need for Motorization

Infantry following an Armored division should be completely motorized. Motorization will not only enable Infantry to stay with Armor but will also permit greater dispersion and provide a means of reconcentration of forces and effort. This mobility will also afford added protection against mass destruction weapons.

Need for Teamwork

A major prerequisite for the effective

[1]For detailed information read "Infantry and Tanks, Inc." in the October 1953 issue of *The Infantry School Quarterly.*

[2]In 1949, one Armored Infantry battalion was added to the T/O&E of the division, giving it a balanced force of four Armored Infantry and four tank battalions, but this was still short, by two Armored Infantry battalions, of what a General Board felt was a sufficient increase.

support of Armor by Infantry is mutual understanding of the capabilities and techniques of each. If possible, the Infantry regiment should participate in training exercises with the Armored division it will support. The regiment should be under control of the Armored commander. However, because of the weakness of communications in a rapid advance and the differences in employment of Armor and Infantry, the Infantry commander should be allowed a great deal of autonomy in the employment of his force.

There are two basic Infantry concepts which should be kept in mind by the Armored commander: the mission of the Infantry in the attack and the method of accomplishing this mission. Although the regiment may be assigned many different tasks, its ultimate mission is to close with and destroy or capture the enemy through the use of fire and maneuver. This is important.

Reinforcing Units

Before discussing the various tasks which the reinforced Infantry regiment can be expected to perform in Armored operations, an examination of the reinforcements themselves is necessary. The following are desirable reinforcements (supplied by the regiment's parent division unless otherwise stated):

1. One light artillery battalion.
2. Two tank companies.
3. One transportation truck company plus two platoons.
4. One AAA AW battery.
5. One engineer company.
6. One signal detachment.

Research reveals that units employed in a reinforcing role during WW II followed no standard pattern.

The fires of the light artillery battalion, in direct support of the regiment when serving with the parent division,

Platoon leader points out the objective to his tank commanders.

could be reinforced by the fires of the Armored division artillery. The fires would be directed against those targets most dangerous to the regiment.

It has been proven that, where terrain is suitable for tank action, a tank-Infantry team constitutes a very effective strikign force. This regiment, when reinforced as suggested, has three tank companies, lending itself to the attachment of a tank company to each battalion. This, in turn, allows battalion commanders to form tank-Infantry teams.

The transportation truck company reinforced with two platoons, should be furnished by corps transportation units. This will give the regiment one hundred 2½ ton LWB general cargo trucks. Eighty-five of these would be required to mobilize the foot soldiers. The remaining 15 trucks would be used to transport logistical reserves for periods of 3 to 5 days. These trucks will normally be assigned in the following manner:

UNIT	TOTAL TRUCKS
Each battalion—27 personnel carriers [3 bns]	81
Regimental Headquarters and Headquarters Co.— 2 personnel carriers	2
Regimental Service Co.— 2 personnel carriers; 15 logistical reserves	17
Total	100

The major disadvantages of using general cargo trucks as troop carriers (lack of armor protection, limited flotation, high silhouette) are usually outweighed by their advantages over tracked vehicles. Some of these advantages are: less expense, simpler maintenance, less logistical support, lighter weight and less road space required.

The attached transportation greatly increases the mobility of the regiment and facilitates the movement of the assault force to forward assembly areas or attack positions.

The AAA AW battery provides antiaircraft protection and can reinforce the fires of the Infantry heavy direct fire weapons. When used to supplement the fires of Infantry direct fire weapons, the platoons of the battery are usually best employed by attachment to Infantry battalions.

The combat engineer company performs engineer tactical and technical reconnaissance, repairs and maintains roads and bridges, removes minefields and employs demolitions. In addition, combat engineers assist in the assault of fortifications, prepare landing fields, operate water supply points and fight as Infantry when required.

The signal detachment should be furnished by the Armored division signal company to include: a radio team (3 to 6 men) and a radio set operating in the division FM command net. This detachment will provide the regiment with

Advancing in wedge formation against suspected enemy positions.

A tank awaits the word to crash through in exploitation.

its primary means of communicating with the Armored division. The division could also provide a wire team should the situation become stabilized.

Missions of the Regiment

Infantry should be well trained in the tasks it will have to perform in support of Armor. The swiftness of an Armored operation allows for no delays caused by its supporting forces.

In the penetration phase, Armor may need supporting Infantry to act as a reserve force. This would be true when a whole division has been committed to effect the penetration. In such an action the Infantry regiment would protect the flanks and rear of the division, conduct counterattacks and reinforce the fires of the attacking echelon.

The Infantry regiment should take the initiative in destroying enemy forces in the penetrated area and blocking forces which are interfering with the exploitation. This should keep the enemy off balance at all times and can best be accomplished when Infantry closely follows advancing Armor, attacking and destroying any enemy force upon contact.

As the exploiting Armored force advances farther into enemy territory, the need for supporting Infantry becomes more apparent. It may be directed to keep open the gap at the point of penetration or to secure objectives gained during the penetration. In some situations, a force larger than a regiment may be required to accomplish this task.

Motorized Infantry units are well suited for securing objectives gained by Armor. They can select defensive positions and quickly establish outposts. Defensive fires for all supporting weapons should then be prepared and coordinated. Tank units should be located to cover avenues of approach and to provide antitank protection in the event of enemy counterattack.

Other important Infantry tasks may include securing lines of communication, expanding the exploited area from the axis of the Armored advance and relieving Armored elements left as blocking forces.

The plan employed to secure lines of communication and supply will vary according to the length of the lines, terrain and expected enemy action. If lines of communication are threatened for only short distances, reinforced battalions may be assigned areas of responsibility. Avenues of approach and key terrain features can be connected by an outpost system consisting of strongpoints and observation posts. If lines of communication are long, battalions should be given the mission of announcing and delaying any enemy threats.

Expansion of the exploited area depends on several factors: the width of expansion desired; whether the Armored division attacked on one or several axes; and the strength and disposition of by-

passed enemy forces. The reinforced Infantry regiment will usually be a force of sufficient size and strength for these expansion operations.

One of the Infantry's first tasks will be to relieve elements of the Armored division left as blocking forces, for, as was mentioned before, it is essential to the success of the mission to keep the Armored division at full strength. If the enemy force is too large to attack and destroy, the regiment itself will act as a blocking force until relieved.

Infantry units will usually employ standard tactics in these maneuvers, but the techniques may have to be modified to keep pace with the swift Armored advance. To this end, the reinforced Infantry regiment must be mobile and flexible. Proper training and adequate reinforcement should enable it to live up to these exacting requirements.

A better understanding of both sides of the Infantry-Armor picture will enable Infantry commanders to prepare for the new, mobile Infantry of the future.

Publication of this article is not necessarily to be interpreted as reflecting the thought of The Infantry School or *The Infantry School Quarterly*.

STAR UNIT . . .

the 21st Infantry

WE take pleasure in saluting the 21st Infantry Regiment for being a 100 per cent subscriber to *The Infantry School Quarterly*.

1862—The Battle of Cedar Mountain gives the 2d Battalion of the 12th Infantry Regiment its baptism of fire. From Manassas to Cold Harbor, the fiercest battles of the War Between the States add their ribbons to the battalion's colors. After the war, the 2d Battalion becomes the 21st Infantry Regiment.

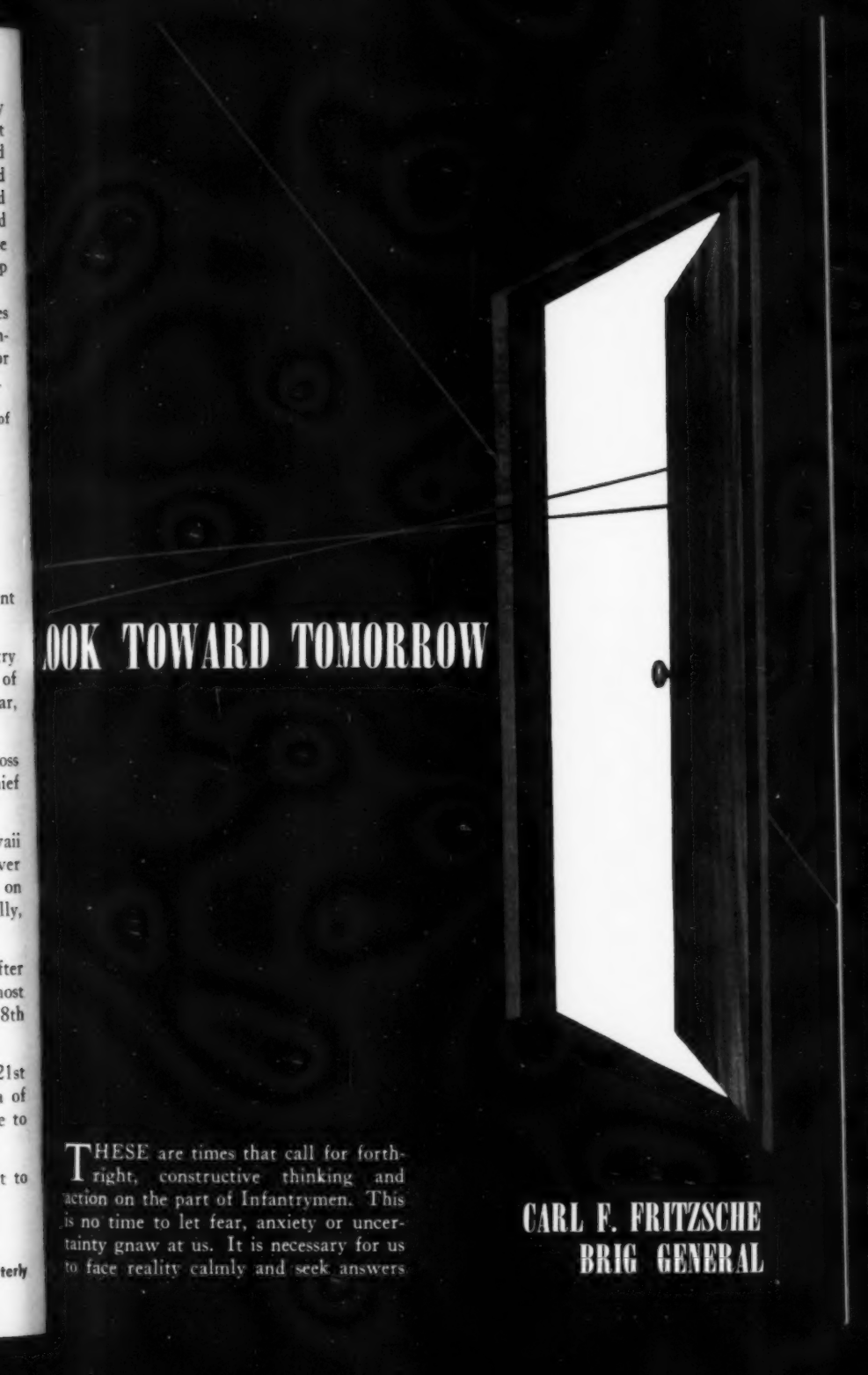
1870—The 21st begins two decades of Indian warfare. They track Apaches across mountain and desert. In 1877, they pursue the greatest of Indian strategists—Chief Joseph of the Nez Percés—in his epic 1300 mile retreat.

1941—December 7. The 21st and other elements of the 24th Division in Hawaii are the first U. S. Army units to open fire in WW II. They win a five day race over jungle trails to the Hollandia Airdrome in New Guinea, and, at Breakneck Ridge on Leyte, blast the enemy from his caves and spider holes with flame throwers. Finally, on Mindoro, hard, steady fighting until V-J Day. . . .

1950—Members of the 21st are the first American soldiers to land in Korea after the communist invasion. They stand at the Naktong River, halt the southernmost enemy advance, and soon afterward, they are among the first units to pass the 38th Parallel.

Colonel Neal W. Lovsnes, who now leads the 21st, writes: "The fact that the 21st Infantry is a 100% subscriber to *The Infantry School Quarterly* is an indication of the high regard in which we hold this professional publication. It is of real value to all commanders."

In every issue we salute an outstanding unit which has subscribed 100 per cent to *The Infantry School Quarterly*. Watch for the next *Star Unit*.



LOOK TOWARD TOMORROW

THESE are times that call for forthright, constructive thinking and action on the part of Infantrymen. This is no time to let fear, anxiety or uncertainty gnaw at us. It is necessary for us to face reality calmly and seek answers

CARL F. FRITZSCHE
BRIG GENERAL

to the problems imposed by the introduction of atomic weapons.

Some time ago, the Soviets announced their possession of thermonuclear weapons and now they claim possession of atomic artillery. This leaves no doubt in my mind that atomic weapons will play a dominant role in future military planning. No one can dispute the fact that our monopoly of atomic weapons is gone—both the free world and would-be aggressor nations have the ability to use these weapons in combat.

Changes

During the past decade, many changes have been made in our overall defense structure as well as in our concepts of warfare—especially land warfare. Most of these involve the *strategic* use of atomic and thermonuclear weapons. In nine years, however, we have taken practically no positive action toward effecting the changes that will be vitally necessary if atomic weapons are to be used *tactically*. Our methods of conducting ground combat have not kept pace with developments in the field of atomic weapons. We *must* not make the error of attempting to fit the weapons of today —or the future—to the tactics of a previous war.

One of our first considerations must be—an active peacetime force which is up to strength and combat-ready both in equipment and training. Such a force (nucleus) would eliminate some of the pains of mobilization. It should be mobile, hard hitting, aggressive, possess high morale and be well disciplined. This force must also be capable of conducting either atomic or non-atomic war. It should be commanded by young officers possessed of the fortitude necessary to withstand the shock of the opening phases of atomic warfare.

In my opinion, unless we can justify requirements for the proper type of tactical atomic weapons in large quantities, now, they will never be developed. Once developed, these weapons should be made available, in times of war, to lower units.

Our *awe* of nuclear weapons must not blind us to the fact that our most difficult problem does not lie in handling them. Our real problem will be the alterations they will dictate in our organization, tactics and logistics if we are to adapt ourselves to atomic combat. The first (and most obvious) innovations will be a result of the need for greater dispersion and increased mobility.

"The safety of the individual soldier

Dispersion

One need not be a veteran combat leader to recognize the fact that troop dispersion on a battlefield (an attempt to negate the destructiveness of atomic weapons) complicates control and upsets the age-old principle of mass. It also seems obvious that dispersion will place a tremendous strain on our communication facilities.

Targets

We must commence thinking about what size force might reasonably be expected to become an atomic target. Will it be a platoon or a company? Will it be a battalion or something larger?

Infantrymen are not accustomed to using artillery, for example, against two or three enemy soldiers. It is conceivable, however, that a small unit (perhaps less than a company) dug into a commanding terrain feature from which it can not be dislodged by conventional means, might well be a "profitable" target for an atomic weapon. On the other hand, the

several thousand men of a regiment, carelessly bivouacked within the potential "danger radius" of an atomic bomb, might be passed up should their location make them impotent to affect the combat in progress.

What Kind of Unit Do We Need?

The tools of war cannot be selected or discarded according to a precise formula. We must direct our thoughts toward finding an ideal unit for use in atomic warfare. What are the desired requisites of such a unit? It would seem logical that it be a comparatively small, self-contained unit capable of influencing the result on a battlefield. It would also have to be mobile, able to fight and logistically self-supporting in combat. If this is what we're after, I would conclude that a battalion-size unit is the answer.

What would be the desired characteristics of our hypothetical unit? To arrive at an answer, we must consider tactics, weapons needed and many other items. Here is a list of the things I consider essential:

1. Tactics. The unit would be capable of fighting effectively in independent operations for approximately three days.

2. Composition. It would probably be composed of organic Infantry, Armor and Medics. We can assume that its higher headquarters would attach Artillery, Engineers, Signal, Ordnance, QM, Transportation (ground and air) for specific operations.

3. Weapons. The weapons of this unit would be light in weight—both direct and indirect fire. Certain weapons (or, perhaps, all of them) should be capable of knocking out armor.

is of tremendous importance."

Meet the Author

BRIG GEN CARL F. FRITZSCHE'S penetrating analysis of the Infantryman's role in atomic warfare is based on his long experience as a commander and staff officer. In "Look Toward Tomorrow" the author gives us his thoughts on the reorganization of Infantry units and provides Infantrymen with an insight into their future.

The author is a graduate of the USMA (1928), the C&GSC, the National War College and the Army War College. During WW II he served as Chief of Staff of the 1st Armored Division and later became Deputy Director of the Intelligence Division, ETO. In Korea he was Assistant Commander of the 25th Infantry Division. General Fritzsche is now Assistant Commandant, TIS.

4. Communications. To increase its mobility and independence, the unit would be equipped with long and short range radios. These should be extremely light in weight, portable, durable and reliable. Wire, when used, would be primarily for internal communications.

5. Command Echelon. The command echelon of our unit would be small, highly mobile and capable of controlling units directly, without subordinate headquarters. I feel that variable troop lists would be the rule rather than the exception.

6. Vehicles. To insure maximum mobility, this hypothetical organization would be equipped with light, wheeled or tracked vehicles. These would be capable of transporting the entire organization (to include the authorized basic loads) without shuttling.

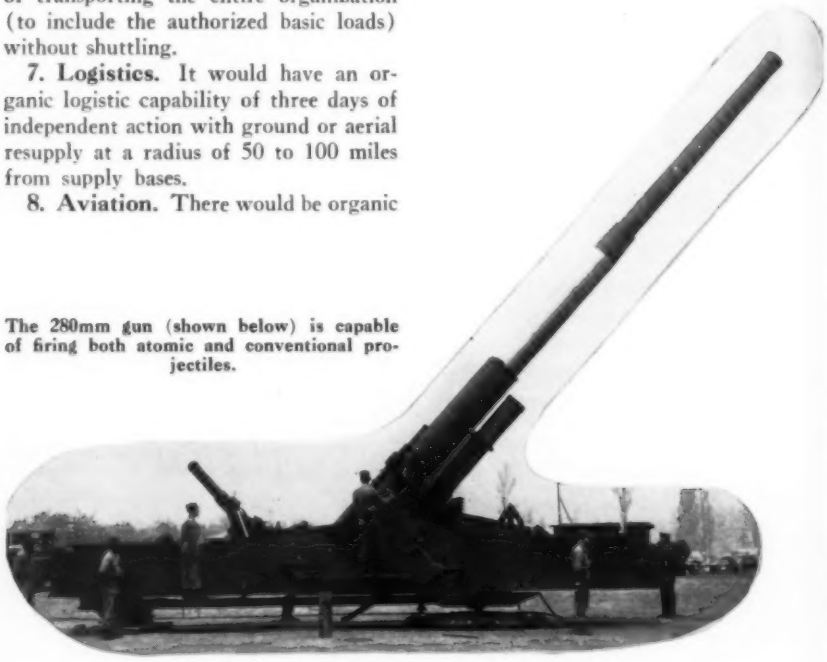
7. Logistics. It would have an organic logistic capability of three days of independent action with ground or aerial resupply at a radius of 50 to 100 miles from supply bases.

8. Aviation. There would be organic army aviation composed of light, fixed-wing aircraft and helicopters for reconnaissance, command liaison, bringing in assault troops and transporting supplies.

Headquarters

To command several of these "theoretical" units we would need a headquarters capable of operating independently without sacrificing control. This headquarters (like those mentioned earlier) would be a small, highly mobile, command echelon capable of expanding or decreasing the troop list by brief message or directive. In a similar fashion, a division commander could trim and tailor the size and composition of one of his combat elements. This element, which we will

"We must keep pace with developments in



The 280mm gun (shown below) is capable of firing both atomic and conventional projectiles.

refer to as a combat team, could act independently, when necessary, or function as part of an integrated division team.

Logistics Command

Within the division organization, we would need a flexible logistics command possessing the capability of providing support to our widely dispersed combat units. It must also be able to protect itself against enemy breakthrough or wide envelopment. I think that a service support command somewhat similar to that of an armored division would be most desirable.

Tactical Use of Atomic Weapons

In considering the tactical employment

the field of atomic weapons."

of mass destruction weapons, we must learn to take advantage of the tremendous damage, confusion and shock action of the weapons. I feel these weapons will be used tactically to: (1) Rupture a well-organized defense; (2) Destroy concentrations of enemy troops, armor and vehicles; (3) Destroy mass penetrations; (4) Destroy pinpoint targets, neutralize areas and (5) Create barriers or block small defiles.

Offensive Operations

When on the offensive, it seems logical that we would make certain changes. For example, I believe that units would move to points of attack at the last possible moment and that an axis of advance rather than boundaries would be prescribed. It seems likely that dispersion would follow the seizure of an objective. These objectives would be deeper and larger and we might do well to by-pass intermediate objectives in order to exploit the damage and shock action of atomic weapons.

The Army's new 280mm artillery gun firing an atomic artillery shell at Frenchman's Flat in Nevada.

Defensive Operations

In order to give commanders greater control over the time and space factors for their units, I believe they will be given mission-type orders. We will have to make a concerted effort to canalize the enemy into an area where he can be destroyed by fires available from within and without a series of strong points. Destruction of the enemy would be accomplished by an offensive action in which we would use mobile reserves and other uncommitted reserves.

Analysis

When I analyze the above, the following general *tactics* and *concepts* seem clear:

1. Troop formations must be *flexible*. Units must possess the highest degree of mobility and maneuverability in order to obtain the maximum effect from our use of nuclear weapons. The enemy's shock and confusion, as well as the damage to his equipment, must be quickly exploited.

2. Time (rather than space) is now the yardstick by which we gauge our ability to mass or destroy.

3. The **tactics,** deceptive measures and placement of troops and barriers must all be designed to force the enemy to canalize his attack toward our prepared killing zones.

4. Control and **operation** of widely separated bodies of semi-independent troops must be mastered. The frequent shifting of units (battalion-size) from one command to another will result in greater centralization of control at division level.

5. Protection from enemy weapons and fringe effects of friendly weapons is essential.

6. Smaller forces may be required (or committed) in the initial phases of a decisive action.

7. Intervals between battalion-size units will be increased. Battalion-size units, however, should maintain their integrity. Dispersion in assembly areas where no rapid concentration is indicated should be by platoons and companies. In the attack or defense, dispersion within battalions will not be greatly increased over that now prescribed. Due to the increased intervals between battalion-size units, however, surveillance of the intervals must be accomplished by the unit concerned or by units furnished by a higher headquarters.

8. Troop concentrations must be massed in shorter periods of time and be closer to the enemy—to avoid offering him an isolated target. Units must be able to exploit the effects of the weapon quickly.

Logistical Doctrine

Enemy sabotage, guerilla tactics and the characteristics of any given probable area of operations will strongly influence our logistical doctrine. As with troops, there will have to be greater dispersion of installations, transportation and material. This dispersion should not only take place while the logistical elements are on the move, but while they are stationary. I believe that the use of multiple covered s well as multiple installations will take on added importance. Neither logistical installations nor troops should be permitted to present a lucrative target by being grouped together.

Guerillas and **partisans** may infiltrate our lines and attempt to disrupt our supply routes because our units will be greatly dispersed and operating on a broad front. This situation may make our present "supply point" system so difficult to operate that we will be compelled to resort to "unit distribution" under centralized control. If the latter system is used, our "unit distribution" trucks would operate in convoy under a security guard.

Weapons

The potential of our present weapons can, I believe, be realized by improving our methods of observation, direction and control. This becomes imperative if we

Changes in our organization, tactics

are to cover the increased intervals between battalions[1] effectively. I also think it would be desirable to have some longer-range artillery under the control of each combat team headquarters.

Control

We can decrease our control problems materially if we have longer range radios with built-in reliability in all types of weather and terrain, and a high resistance to jamming. There must also be greater control at lower units. (Lacking such control, troops will continue to "bunch up" and will fail to meet even today's dispersion standard.) A small, individual radio[2] would seem to be the solution. This radio might also be equipped with a device that would give warning of an impending atomic strike.

By placing helicopters at battalion, as well as at higher headquarters, control could be further improved.

The Soldier

The safety of the individual soldier is of tremendous importance. We need to pay more attention to protective equipment. Such equipment should, in my opinion, include items that will help troops dig in quickly. A simple earth auger or bucket digger operated from a jeep would be of real value as would be any type of excavating equipment, including a liberal quantity of engineer tools. Shaped charges or foxhole blasters would be of considerable importance. In addition, we will need lightweight spun-glass blankets, goggles (superior to any now in existence) and face creams to protect against the blinding and flash effects of atomic explosions.

No Time for Archaic Thinking

With the advent of a weapon that has the explosive equivalent of many thousands of tons of TNT packed into one shell—this is no time for archaic thinking. It is evident that we must be prepared to fight an atomic war regardless of any individual assumptions we may make concerning the use of atomic weapons in future warfare. It is equally evident that changes in our organization, tactical concepts and equipment are long overdue.

and equipment are long overdue

We must not permit ourselves to be bewitched by the fiction that has been written suggesting that atomic warfare renders ground forces expensive anachronisms. Any attempt to solve military problems by machinery alone, hence minimizing the value of the *man*—which in effect is what the fictioneers are doing —is to court disaster.

In terms of the future, we Infantrymen must broaden our outlook. We must take advantage of new weapons and equipment. We must continually *look toward tomorrow.*

Publication of this article is not necessarily to be interpreted as reflecting the thought of The Infantry School or *The Infantry School Quarterly.*

Getting an idea should be like sitting down on a pin; it should make you jump up and do something.—E. L. Simpson.

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[1]See "Mobile Defense," January 1955 issue of *The Infantry School Quarterly.*
[2]See "Wrist Radio," page 22, January 1954 issue of *The Infantry School Quarterly.*

an interv

terrain a KEY to victory

THE modern Infantryman has learned that how he fights is determined by the ground on which he fights. He knows that the soldier who best adapts combat techniques to any terrain situation has a decided advantage. Proper utilization of terrain is one of the keys to success in battle.

Fortunately, the Infantry has a system of terrain analysis which works for any terrain, at every level of command. It is simple, logical, concise. A thorough understanding of this method, and the reasoning behind it, is a basic tool of the Infantry leader. Because of its vital importance, we have asked Major Kenneth M. Ruddy to explain terrain analysis in detail.

- - - - - -

Q. First of all, Major Ruddy would you define *terrain analysis?*

A. Terrain analysis is the study of the military aspects of a contemplated area of operations, resulting in conclusions about the best use of available terrain.

Q. Why is it so important?

A. Terrain is one-third of any battle. Of the three unknowns of the battlefield—enemy, weather and terrain—terrain is the most tangible and promises the richest dividends to the

. . . . . Maj Kenneth M. Ruddy

commander who knows how to exploit it. And that goes for everyone from the squad leader who has to get his men across a ditch—to the general who must traverse rivers and mountains.

Q. But how can one system of analysis work for all terrain and every level of command?

A. By definition, analysis means "examination of anything to distinguish the component parts or elements." Every new area of operations presents a special problem, calling for a special solution. But a system of analysis which distinguishes the right elements and puts them in the right order should apply to any terrain. Of course, the elements that interest the soldier must vary according to his mission. A squad leader will be more concerned with concealment than will a division commander. But he is usually restricted to one ridge line or finger of ground, so he will worry less about avenues of approach. By emphasizing their special interests, both commanders can use the same method of terrain analysis.

Q. But why should their method be the same?

A. Consider how terrain fits into over-all operational planning. The intelligence officer studies the ground and makes deductions based on physical factors alone. The S3, building on the S2's physical analysis, also studies the terrain. He determines its best tactical use with the friendly forces available for the specific mission. These officers present their recommendations to the commander to help pattern his decision. Don't you agree that it would be easier for a commander to coordinate their findings with his own—if all three use the same system of analysis?

Q. That sounds convincing. What are the steps in this "magic" system?

A. The elements are not new. I'm sure you know all five already—critical terrain, observation and fields of fire, cover and concealment, obstacles and avenues of approach.

Q. Is the order important? Couldn't you scramble them and start with avenues of approach?

A. That's one point I want to emphasize! The order is logical, not arbitrary. That is the real "magic." The whole analysis is based on our initial choice of critical terrain and leads to the final selection of avenues of approach.

Q. Then let's take up the five elements in order. How would you define *critical terrain?*

A. A critical terrain feature is one which would offer a marked advantage to either combatant. In practice, critical terrain for regiments and smaller units will normally be the dominating hills and ridges in a given area of operations.

Q. Why hills and ridges?

A. Well, what are the "marked advantages" we seek? Basically, they are the ability to see and shoot at our enemy. Naturally we try to control ground from which we can best observe and fire on the enemy—and that will be high ground.

Q. But surely other factors influence our choice of critical terrain? If you had to cross a river, wouldn't the only ford be critical?

A. Of course. It depends on your mission. Perhaps your next operation calls for speed. In that case, the only road on which you can move becomes

DIFFERS IN ATTACK AND DEFENSE.

critical terrain. Or suppose this road is the sole supply route for your unit. You certainly have a "marked advantage" if you control the road! Even communications centers can be critical—especially at division and higher levels.

Q. Does the choice of critical terrain differ in the attack and the defense?

A. Yes, indeed. Look at Figure 1. Suppose you command a regiment preparing to attack Hill X. Obviously, the hill itself and the ground leading directly to it are critical. What other terrain features offer decided advantages in seizing the hill? This bridge is one. That approach on the ridge line is another. The road through the wooded area might make a third.

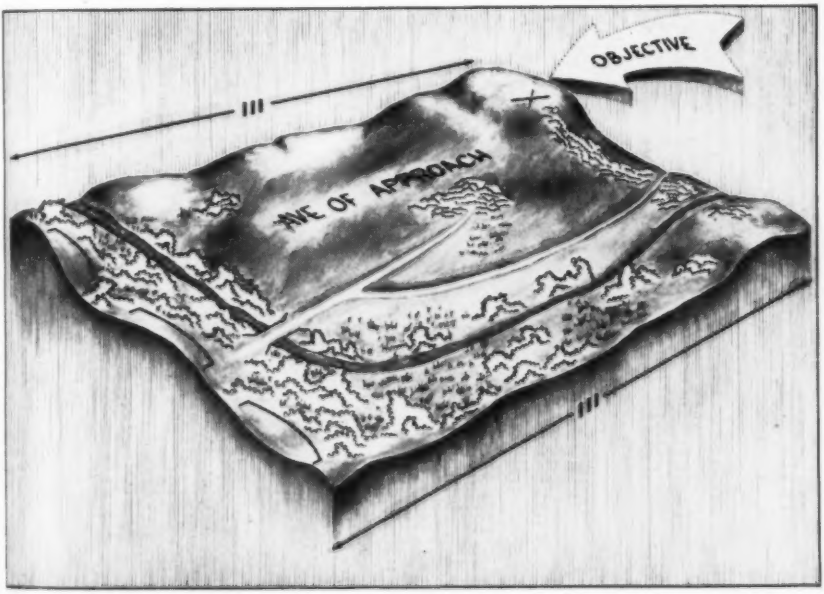
Q. What about critical terrain in the defense?

A. The vicinity of the proposed MLR is critical—so is any commanding ground, rear or forward, that will materially aid our defense. We might even designate some terrain as critical intending to deny it to the enemy rather than occupy it ourselves. If the bridge in Figure 1 were destroyed or denied by fire, the stream would present a much greater obstacle to the enemy. Our final positions on the MLR result from such initial choices of critical terrain.

Q. When we know what ground offers definite advantage to either adversary, what's the next step?

A. In the attack—we want to know how to seize that terrain from the enemy.

Figure 1. What terrain features offer decided advantage in seizing Hill X?



"IT'S NATURAL TO LOOK FOR COVER —

In the defense—we want to know how the enemy can seize that terrain from us. Attacking or defending, we have to know how best to reach the critical terrain—so we select avenues of approach.

Q. But that's the very last step, isn't it?

A. True. You see, we don't just choose the approaches that "look good." First we have to consider observation and fields of fire, cover, concealment, and obstacles, in order to choose intelligently.

Q. That's what you meant when you said that the sequence of the analysis is logical?

A. Exactly. Remember, too, that the importance of these intermediate steps varies according to the level of command.

Q. A moment ago, you mentioned "the ability to see and shoot at our enemy." Isn't that what we mean by observation and fields of fire?

A. Yes. That brings us to our second element—a very crucial one. We want the best *observation and fields of fire* we can find. In defense, we select positions that offer these advantages, and in the attack, an approach that offers them. Usually, they will be found near areas originally designated as critical terrain. Of course, in making our choice, we need to consider the enemy's *cover and concealment*.

Q. I'm sorry to interrupt, but just what is the difference between the two?

A. If the enemy can't see you, you're "concealed." But that bush which hides you, won't stop a bullet or a mortar fragment. If he can't shoot at you, you're "covered." Normally, if you're properly covered, you are also concealed.

Q. Then cover is more desirable than concealment, since it protects us both from observation and fire?

A. It's natural to look for cover—nobody likes to take chances. But don't forget that good concealment is nearly as safe as complete cover. After all, if the enemy doesn't see us, he's not likely to shoot our way!

Q. What sort of cover offers the best protection from enemy fire?

A. Take what the terrain provides. Hedgerows in France protected you from most line-of-sight fire, such as small arms and 37mm. But they weren't much help when a mortar shell landed on your side of the

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FAST ON

We claim to be faster than any military magazine West — or East — of the Pecos. *The Infantry School Quarterly* publishes Infantry doctrine months ahead of field manuals, circulars and training literature. Recent *Quarterly* firsts include Mobile Defense, the M-48 Tank, the New Operations Order and the NCO-Specialist Rating Plan. In this issue, we introduce the T-48 rifle. How can we score so many bullseyes? Here at Fort Benning we are at the source: we

hedge! In North Africa — you wouldn't believe anyone could find cover in the desert, would you? Yet there it was, behind any hump or dune that shielded you from flat trajectory fire. The best protection from high trajectory fire, of course, is the Infantryman's home away from home, the hole in the ground. Ditches give helpful cover, and so do buildings and even small folds in the ground.

Q. How about some good examples of concealment?

A. All the types of cover which I mentioned furnish concealment if properly employed. But often you will use concealment which gives no cover—scattered brush or tall grass or an early morning fog. We need to consider both aerial and ground observation, just as in studying cover we have to consider flat trajectory, high trajectory and overhead bursting fire.

Q. Doesn't that get rather complicated?

A. I don't mean that you have to write out a detailed list. But all these elements must be considered. Otherwise you may be tempted by such wrinkled errors as the idea that woods furnish good cover and concealment.

Q. Don't they?

A: Concealment? Yes. Cover? Well . . . some, depending on the thickness of the woods. Cover from mortars and artillery? Just the reverse—tree bursts make their fire even deadlier. You can see how the time-honored phrase "cover and concealment" begins to wobble. The only safe solution is meticulous study of every aspect of the individual problem.

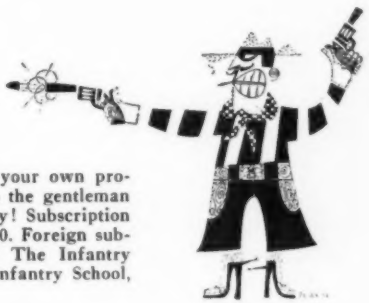
Q. For the sake of clarity, would you like to sum up the role of cover and concealment in terrain analysis?

A. In textbook language, then—the overall function of our study of cover and concealment is to facilitate maximum use of that which is available. In the attack we choose approaches and in the defense we choose positions which offer the best cover and concealment. In either case, we study the cover and concealment available to the enemy in order to nullify it.

Q. What are the methods available?

A. Fields can be burned, woods and buildings leveled, mines laid at strategic points—but the real answers to cover and concealment are observation and fields of fire. In fact, these two are simply cover and concealment turned upside down.

THE DRAW!



see new doctrine made. Without such information, your own professional knowledge will soon be as full of holes as the gentleman on the left. Become a sharpshooter — subscribe today! Subscription rates are: 1 year, $2.50; 2 years, $4.75; 3 years, $7.00. Foreign subscribers add .25 cents yearly for postage. Write: The Infantry School Quarterly, c/o The Book Department, The Infantry School, Fort Benning, Georgia.

Q. I'm still not sure I understand.

A. Let me put it this way. . . . What is concealment but not being seen? And what is observation but the act of seeing? "Cover" refers to areas into which the enemy cannot shoot, and "fields of fire" are the areas into which he can.

Q. In that case, the best observation and fields of fire will be those which minimize the enemy's concealment and cover.

A. Yes—and conversely, we study the observation and fields of fire available to the enemy in order to counteract them by our use of good cover and concealment.

Q. What if your best concealment and cover does not coincide with the best available observation and fields of

Figure 2. The best cover and concealment is along the left ridge approach. Observation and fields of fire are better along the right ridge approach where cover and concealment are limited. The best combination, however, is found on the right ridge approach.

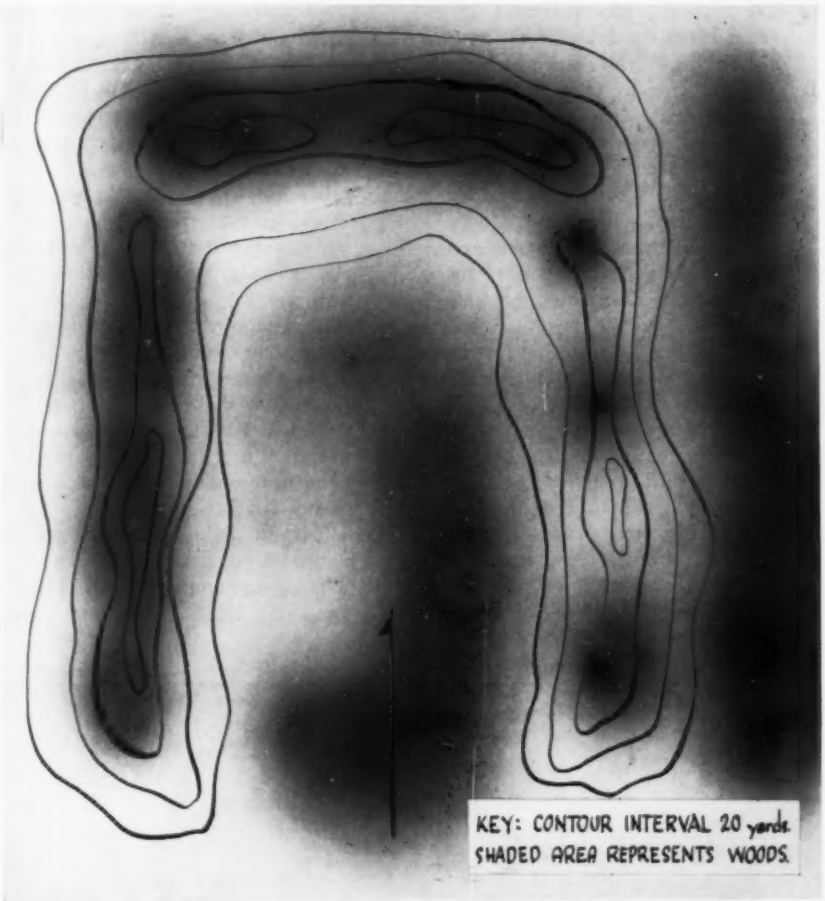


Figure 3. The low wooded area offers the best concealment. Observation and fields of fire are excellent along the right ridge approach. The left ridge approach, however, affords the best combination.

fire? After all, how often is the spot from which you can best see the same as that where you can least be seen?

A. Good point! When they do not coincide, we can only compromise, striving for the best possible combination. Some compromise will be necessary in most concrete situations. These aspects of terrain interconnect in an actual problem just as they have in our discussion.

Q. Could you give me some examples?

A. Yes—suppose you were attacking a position at the crest of a horseshoe ridge like this (see Figure 2). You notice that the left ridge is thickly wooded, but the bare right ridge permits better observation and fire. In this case, I'd rather have the observation and fire from the right ridge.

Q. Assume that the low ground is heavily wooded, while the right ridge, with

scanty cover or concealment, offers fine fields of fire and observation (see Figure 3). Which do you prefer?

A. Neither. It seems to me that the left ridge is clear enough for good observation and fire, while its scattered wood and brush provides adequate concealment. That makes it a better approach than either of the others. You can see from these simple examples how we balance factors of cover and concealment against observation and fire.

Q. I think you have answered my questions on this phase. Now let's move to another. You evaluated the first three elements from the point of view of the attacker and the defender. Can you do so with *obstacles?*

A. Very easily. We incorporate natural obstacles into our defenses, and create artificial obstacles to supplement them.

Q. "Incorporate" them, Major Ruddy? You can't rearrange natural obstacles to suit a defense plan!

A. No, but we can arrange our plan to exploit natural obstacles. In Figure 4, our MLR overlooks a stream. By choosing this dominating position, we do, in effect, incorporate the stream into our defenses. We take advantage of the difficulty the enemy will have in crossing the stream. We increase that difficulty by covering the stream with fire.

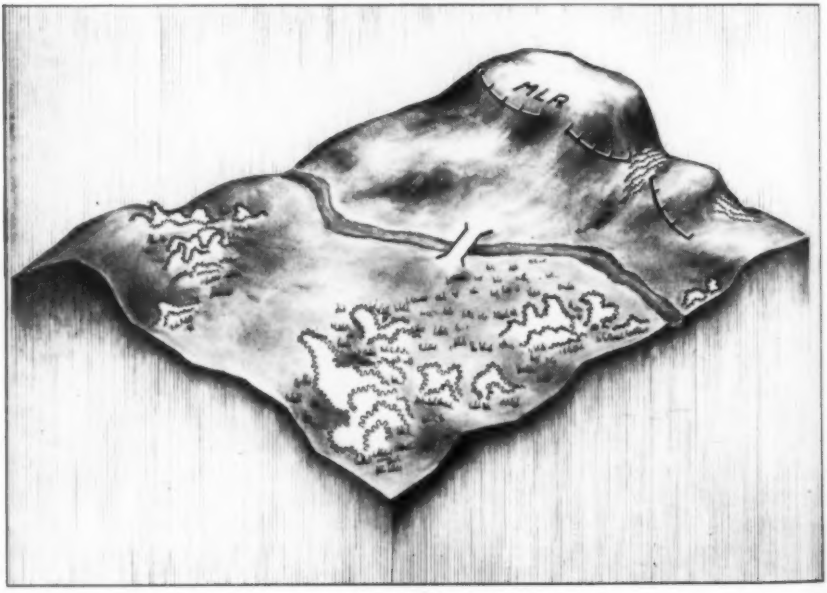
Q. The attacker, then, should try to avoid such obstacles.

A. Avoid them—or perhaps use them for protection. Let's say we have succeeded in crossing the bridge in Figure 1. The river, once an obstacle, now protects our right flank against enemy attack.

Q. What are some other examples of natural or artificial obstacles?

A. The most common natural obstacles are steep cliffs, swamps, rivers,

Figure 4. We must exploit natural obstacles.



streams and forests. We can add minefields, barbed wire and anti-tank devices. But note that all these don't hinder every kind of movement. We evaluate obstacles by their effect upon tracked vehicles, wheeled vehicles and foot soldiers—the three types of movement normally present in modern warfare. The defender will attempt to block all three, and the attacker searches for a route which permits at least one.

Q. In other words, our last element—an *avenue of approach.*

A. Let me go back and review *our* avenue of approach. We have pursued our terrain analysis to a point where we know:

In the attack—

The critical terrain.

The best combination of cover and concealment with observation and fields of fire.

The obstacles we must avoid, or use for protection.

Now we are prepared to choose the routes we can best employ to seize our objectives.

In the defense, we know:

The critical terrain.

The best combination of cover and concealment with observation and fields of fire.

The obstacles we can incorporate into our defense.

Now we are prepared to choose the routes the enemy is likeliest to use to seize the positions we are defending.

Q. The analysis certainly balances neatly. But how do you actually choose these routes?

A. First we determine all logical routes. Then we gradually narrow the field to the one or two most advantageous approaches.

The attacker naturally chooses a route that leads to critical terrain, provides good observation and fields of fire and also good cover and concealment, avoids obstacles or exploits them for protection. The defender simply evaluates, in the same way, the routes available to the enemy. When we have made these deductions, we have performed a complete terrain analysis. Simple, isn't it?

Q. It's almost a recipe! "Take the five steps, mix in proper order, simmer well—and you have the right answer to your terrain problem!"

A. Unfortunately, no recipe can subtsitute for know-how. You have to add several heaping spoonfuls of intelligence, and as many more of experience, if possible!

Q. Then why use a system of analysis at all?

A. Because even the cleverest of us need a road map for our thinking. There's little danger of our failing to see a terrain problem as a whole. But we sometimes need help in breaking down the over-all problem into significant aspects and ordering these into a logical sequence. Like every army formula, both division and sequence must be applied flexibly to each particular situation. So applied, this system of analysis can make the difference between the right and wrong use of terrain—and that may mean the difference between victory and defeat.

TERRAIN IS ONE of the keys that unlocks the enigma of battle. MAJOR KENNETH M. RUDDY tells us in an interview "that of the battlefield unknowns, terrain is the most tangible and promises the richest dividends to the commander who knows how to exploit it."

Currently Assistant PMS&T of the ROTC Detachment at the University of Alaska, the author received his commission from the USMA in 1948. Since that time he has served with the 27th Infantry Regiment in Japan and Korea and the Staff Department, TIS.

QUIZ

ANSWER the following questions to determine whether you are a bolo, recruit, marksman, sharpshooter or expert. Each question is worth 10 points.

1. What are the two primary duties of the S2?
2. The battle sight setting for the M1 rifle is the zero obtained at (select *one*):
   a. 200 yards.
   b. 100 yards.
   c. 300 yards.
   d. 500 yards.
3. What is the number and location of radio maintenance personnel in the Infantry regiment?
4. In attacking a fortified position, battalion direct fire weapons are emplaced to permit delivery of (select the *one* best answer):
   a. Flanking fire into pillbox embrasures and on known or suspected point targets.
   b. Frontal fire into pillbox embrasures and on definitely located weapons positions.
   c. Saturation fire on the battalion objective.
   d. Effective fire on open emplacements around pillboxes.
5. What are the three types of barbed wire obstacles by mission?
6. How are drop zones for daylight aerial resupply marked?
7. The M52 superquick fuse used on 60mm mortar ammunition is classed as *bore safe* because (select *one*):
   a. The fuse cannot be armed until the safety wire is removed.
   b. The striker is held away from the primer by the action of the striking spring.
   c. The safety pin bears against the inside of the tube and is prevented from leaving the fuse until the round leaves the muzzle, thus preventing the slider from alining with powder train.
   d. The set back pin does not release the safety pin until the round clears the muzzle.
8. Which *two* of the following items of equipment are included in the T/O&E for the 60mm mortar squad? (Each correct answer worth 5 points.)
   a. Binoculars.
   b. Compass.
   c. M-10 Plotting Board.
9. Describe the purpose of the Basic Planning Guide as used in Airborne operations.
10. One purpose of the oil pan of an engine is to (select *one*):
    a. Cool the lubricant.
    b. Catch loose working parts.
    c. Provide positive circulation.
    d. Support the engine block.

For answers see page 86.

New Aids for Rifle Instructors

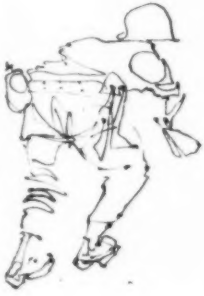
Our goal:

every man a sergeant york

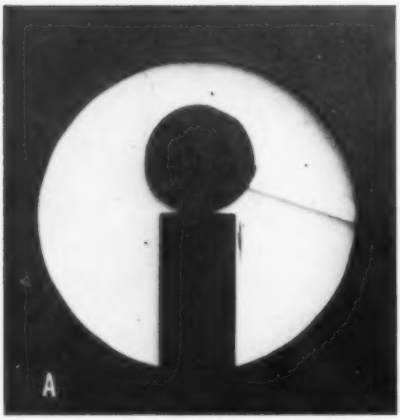
SERGEANT YORK, how many of the Kaiser's men did you hit as you lay there in the brush firing at them?"

Sergeant York stared thoughtfully at the Secretary of War and replied, "Mr. Secretary, I should be sorry to think I had missed any of them."[1]

In the heart of the Argonne Forest on 8 October 1918, practically unassisted, this man (whom General Pershing called "the outstanding civilian soldier of WW I") whipped an entire German machine gun battalion. He killed 28 of the enemy, captured 35 machine guns and, with



maj. clyde e. hughes



Conventional Sight Picture Model

the help of a handful of doughboys, brought in 132 prisoners.

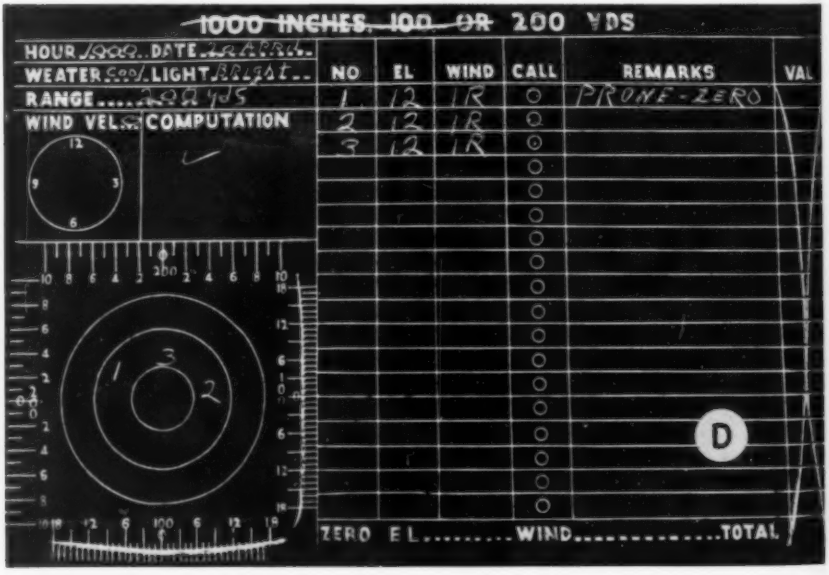
In 1919, both Houses of Congress stood and cheered this Infantryman from the mountains of Tennessee. Never before had such an ovation been given an enlisted man.

Training Aids . . . between the soldier's his military

Sergeant York took his fame in stride, saying that he was no different from other mountaineers who had simply grown up with rifles. He went on to explain how, even as children, they learned to take their rifles apart and put them back together again. He said that many mountain folk could actually make rifles and most were adept at making necessary repairs. Game shooting in the woods provided them with excellent practice and outdoor living with plenty of good food and sleep — keeping their nerves and eyes sharp. Thus, he reasoned, mountain people were just naturally some of the best shots in the world.

[1]*Sergeant York,* Skeyhill, Doubleday, Doran and Co., Inc., 1928

Old Scorecard

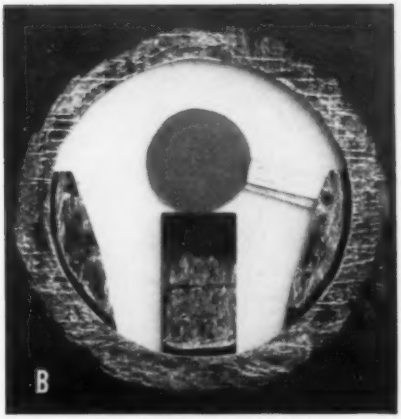


bridge the gap civilian past and present.

Not every Infantryman can claim such close kinship with his basic weapon. The complexities of modern civilization naturally preclude such knowledge. To compensate, we must place increasing emphasis on training and training aids.

Here are some new aids to rifle marksmanship which may not make every soldier a Sergeant York—but will materially assist in achieving that goal. . . .

Thousands of recruits and students have heard instructors say, "The last focus of your eye is on top of the front sight blade," while pointing to the conventional sight picture model (see Figure A). It was only recently that someone realized that the model's sight picture is not what the firer sees when "focusing his eye on top the front sight blade." Actually, the firer also sees the front sight guards (see Figure B). Notice,



New Sight Picture Model

Firing Data Card

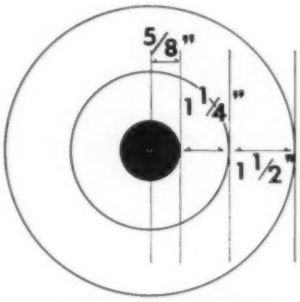
C. Mock-up of Rifle Sight and Target

too, that the front sight, rear sight aperture and bulls-eye are not as clear and distinct as shown in the earlier model. This new model is more realistic.

"Call your shot!" How do you explain this phrase to someone who has never fired a rifle? Again, a demonstration of the process gets the teaching point across better. This can be done with a mock-up of the rifle sights and the target (see Figure C). The instructor weaves the sights back and forth slightly while explaining that the "firer" is aiming at the target. While the class is watching this weaving movement, a man standing behind the training aid fires a blank cartridge. At the same time, the instructor joggles the sights to give a recoil effect. When the sights settle back into position (as they would in proper follow-through), the instructor calls on a member of the class to "call the shot." The student calls his last sight picture before the blank was fired. . . . Simple, but effective.

When the student begins firing on the 1000 inch range, he has to record rifle and firing data. For years, the score card (DA AGO Form 83) has been a needlessly difficult form (see Figure D). A new DA AGO Form 83, which incorporates a Firing Data Card, has been approved by Department of the Army to replace the present score card when existing stocks are depleted (see Figure E).

From the time the firer records his elevation and windage until he has marked the value of his shot, there is no excess information called for . . . no extra squares or circles to fill. The new card



F. Present 1000-inch Target

gives the instructors an immediate picture of the firer's progress.

Consider yourself the instructor and compare the two cards with the purpose

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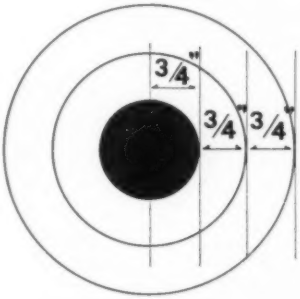
If your bayonet breaks, strike with the stock, if the stock gives way, hit with your fists, if your fists hurt, bite with your teeth . . . you are Infantry.—W. I. Dragonriff

of critiquing the student who has just fired his first three rounds for zero. Notice how quickly you can determine the firer's problem when studying the new card.

Another timesaver would be a revision of the present 1000 inch target (see Figure F). The dimensions of this target are extremely difficult to fix in mind, whereas those of a proposed target are easily memorized (see Figure G). Remembering that one click (elevation *or* windage) will move the strike of the bullet one quarter inch on the target, the student knows that three clicks will move the strike from any ring to the next or from the edge of the bull to center bull. You also get the same size sight pictures as with the standard "A" target at 200 yards.

"All right, change over. Coaches become firers, firers become coaches." The ensuing scramble of struggling out of loop slings and returning rifles to the racks could be avoided with little expense or difficulty. How? By merely adding



G. Proposed 1000-inch Target

a hook to the present web sling that would engage the stock ferrule swivel (see Figure H). The firer could then unhook the sling, leaving it on his arm, and pass the rifle to his partner. The partner would engage the hook of his own sling to the swivel and the class would be ready to continue. An assistant

SERGEANT YORK knew the workings of a rifle at an age when most of us were trying on our first pair of roller skates. As the title of this article indicates, our goal is to make every soldier a marksman of similar caliber. With less experienced personnel, we find that rifle marksmanship improves as teaching methods improve. MAJOR HUGHES offers several new teaching aids. He himself is currently a student at the Command and General Staff College, Fort Leavenworth, Kansas. He served as a battalion exec with the 7th Division in Korea.

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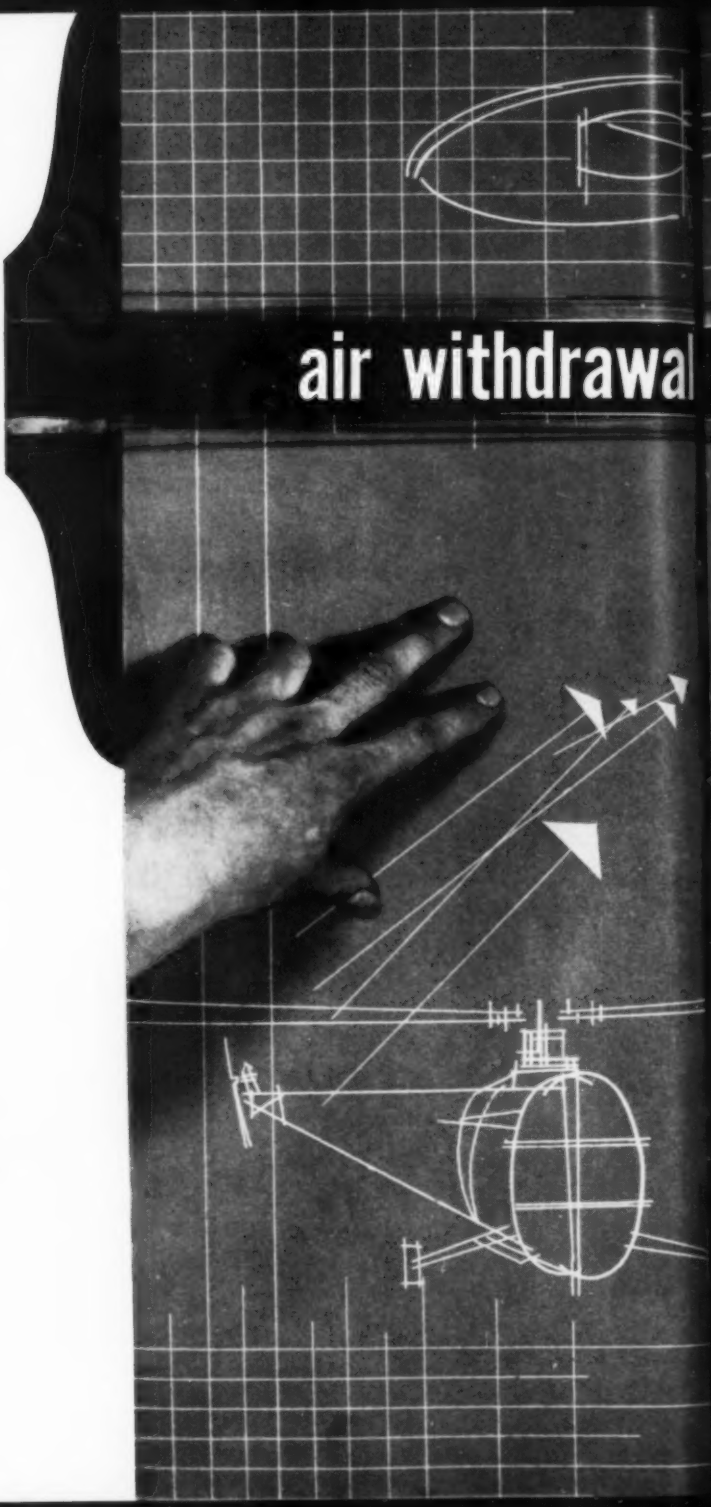
instructor, wearing such a sling, could make an individual correction with a minimum loss of time by using the student's rifle.

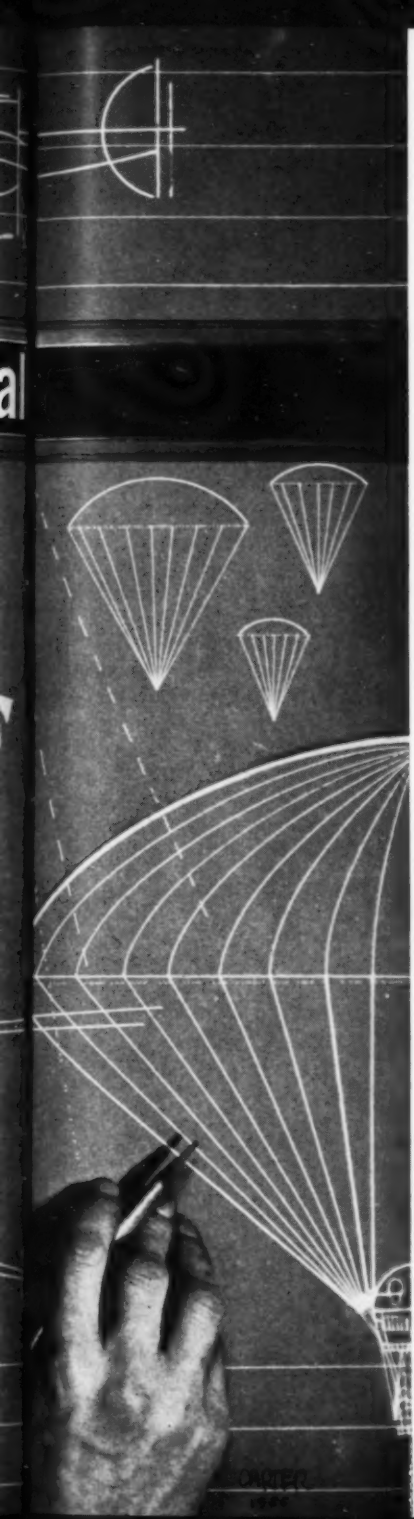
* * * * * *

These training aids should materially help to make the learning process easier for the new rifleman. We must always be on the alert for aids and methods that will assist us in bridging the gap between the soldier's civilian past and military present. Our goal is to make every soldier a Sgt York. In his hands the rifle was more than a weapon—it became part of an unbeatable combination.

D. Sling with Hook Attached

BLUEPRINT





lt col lehman h. johnson

PICTURE in for yourself . . . . Imagine parachutes dropping far behind enemy lines in the grey light of early dawn—sleepy guards surprised and overwhelmed—the vast underground supply depot rocked and shattered by high explosives. Enemy reserves mobilize, but they have been caught off balance; there is confusion, delay. Roads are cratered, bridges down; overhead, American aircraft snarl and pounce. When at last the enemy break through in force, they find only a big meadow, hastily converted to the semblance of an airfield. It is deserted. On the horizon, the last American transport

hums and vanishes. The raiders have withdrawn—by air!

The situation is fictitious — but it need not be. Our raids in the past have been short range affairs. Withdrawal overland or by sea restricted us to targets near the front lines or the coast. Unless we could count on extensive partisan aid, effective counterattack. This means countless opportunities to hit the enemy where he least expects it and it will hurt the most —to disrupt his strategy, destroy his vital supplies and communications — even to kidnap his key personnel.

Such raids will almost certainly figure in any future war. The question is —

Hit the enemy, destroy his supplies . . .

rear area objectives had to be isolated by terrain or enemy dispositions.

Such limitations no longer exist — or if they do, only reflect the limits of our imagination. For now we can withdraw by air.

Today, airborne troops are trained to fight deep in enemy territory, even where the population is hostile and enemy resistance strongly organized. We have aircraft which can land and take off on selected terrain anywhere in the world. This combination opens up a new world of exciting possibilities. A small raiding party can strike and withdraw by air before the enemy has time to organize an which side will profit by them? That depends on our ability to blueprint a vision, to reduce it to concrete, practical problems — and to solve them. We have existing doctrine on air withdrawal, but the techniques are not spelled out: this article attempts to outline these techniques. A blueprint has little drama about it, but the prosaic work of planning and analysis must be done to turn today's exciting idea into a fighting weapon for tomorrow.

Each mission presents its special problems and special opportunities. We can, however, prescribe the responsibilities of the commanders, and outline methods of

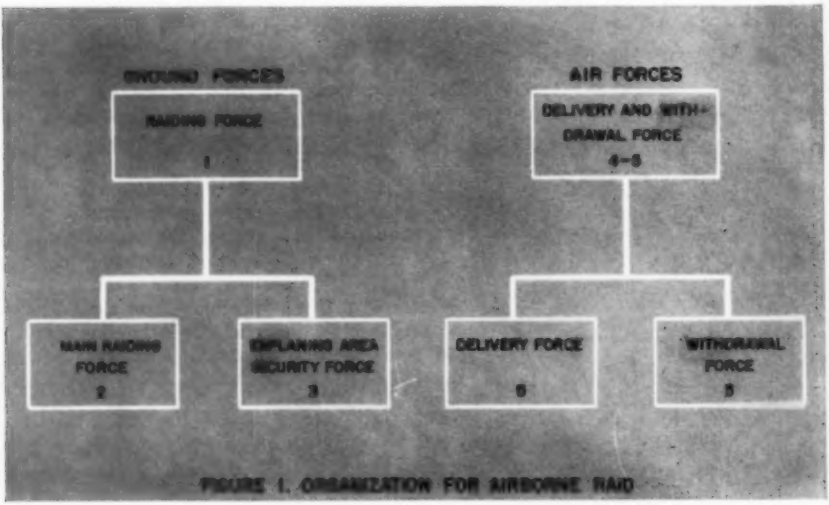


FIGURE 1. ORGANIZATION FOR AIRBORNE RAID

preparing and carrying out a normal raid. The headings which suggest themselves are Organization, Execution and Planning. Let us consider each in turn.

ORGANIZATION

The **Raiding Force Commander** is in charge of all elements committed to the objective area. He usually retains personal command of the main raiding party and directs its attack on the objective. He may elect to occupy and organize the withdrawal loading sites after completing the raid itself. To save time, however, he will usually detach a separate security force to prepare loading sites while the raiding party accomplishes its own mission.

The **security force** is made up of combat personnel to reconnoiter and defend the loading area and to act as a covering force while the raiding party enplanes. It also includes air force elements: **air control teams** to assure close combat air support and **landing control personnel.**

The **Enplaning Area Commander** commands the security force. He is responsible for turning the withdrawal loading area into a workable airfield and for defending it, for transmission of reports to the raid commander and for coordination with the withdrawal force. He will take measures to prevent detection and interference by the enemy. He directs or assists landing control personnel in organizing the airfield and employs all the men he can spare in terrain improvements. The adjustment of withdrawal plans to existing situations is his responsibility, and he may be authorized to put alternate plans into effect. He will prepare detailed plans for gradual reduction of the defense perimeter. These plans, which should allow for possible employment of the main raiding party, are to be submitted to the raid commander on his arrival.

Delivery and withdrawal aircraft will normally operate under a single **Transport Force Commander,** even though the two missions may be carried out by different types of aircraft under subordinate commanders. The transport force commander is responsible for the delivery of the raiding force, including measures to prevent enemy interference in the air, and for all details of the withdrawal involving employment of aircraft. The delivery of supplies and reinforcements is also his duty. He faces massive problems of coordination: he must arrange for combat air support of ground forces, for diversionary missions and for the use of reconnaissance aircraft to select landing zone(s) and withdrawal loading sites and to relay messages. Naval and other aviation may also participate. (Naval surface forces can sometimes be of assistance by providing diversions or fire support or an alternate means of withdrawal.)

The cooperation of **guerrilla forces** and **secret agents** is arranged through Unconventional Warfare Headquarters (at Army level). Partisans supply expert guides and the latest intelligence. It may be possible for them to mark and prepare withdrawal loading sites before the raid without attracting the enemy's attention. They may also reinforce the raiding and security forces or create diversions independently. The assistance of guerrillas and special agents is sometimes available even in the midst of a hostile population. Such aid can be as essential to success as that of any other arm or service.

communication . . . capture key personnel

The raiding force should be large enough for success in its mission and small enough for an easy withdrawal. A small raiding party may be defined as a unit insufficient to suppress a hasty mobilization of usual rear area units and agencies (reinforced with indirect and automatic fire weapons and light armor) in an area permitting concentration within a few hours.

An airborne Infantry battalion — minus administrative and logistic components — is considered the norm for small-scale airborne raids. (For each individual raid, of course, the "norm" is whatever is needed to accomplish the mission.) When the raiders land (rather than parachute), the norm is an Infantry battalion cut to 500 men, with reduced rifle companies to permit the inclusion of heavy weapons groups. This number of men can be carried by 10 medium assault aircraft — a reasonable number to land and take off on sites meeting minimum airfield criteria.

A battalion can drop from a few planes on a compact drop zone, assemble and move out — even in darkness — within a brief period. Its organization, equipment and trained personnel make it suitable for raids, and it is large enough to detach a reinforced company for a security force without crippling the raiding party. The raiders should still be numerous enough to brush aside sporadic enemy interference and crush local defenses at the objective.

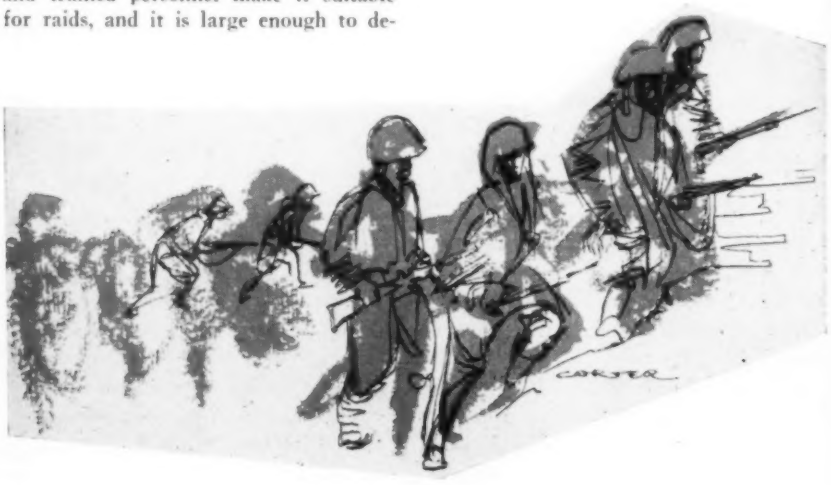
EXECUTION

Speed and surprise are the essence of a raid. The **raiding party** must use every means to cut time spent in the objective area, to seal off the area and to deny the enemy accurate intelligence. Wires and other communications will be

"Speed and surprise are

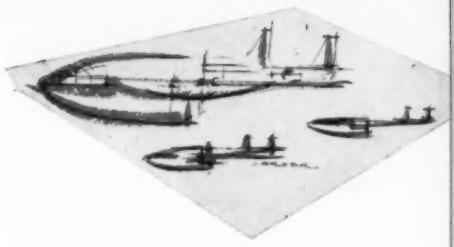
cut; roads, bridges and railroads blocked or destroyed. After completing their mission, the raiders move immediately to the withdrawal loading area. There they will reinforce the defenses, assist in terrain improvements and prepare to enplane promptly on the arrival of withdrawal aircraft.

The **security force** moves from the DZ to reconnoiter the withdrawal load-



ing area. Again it is important to stifle enemy intelligence. Communications should be cut, civilians impounded and enemy forces neutralized. Such overt activities may be delayed to prolong secrecy, but the loading area must be occupied and organized for defense and the "air strips" prepared. With a small force, preparations will usually be limited to felling trees, gapping fences and leveling obstacles. Meanwhile, landing control personnel will prepare signals and put out markers as required.

The **withdrawal aircraft** must land



the essence of a raid."

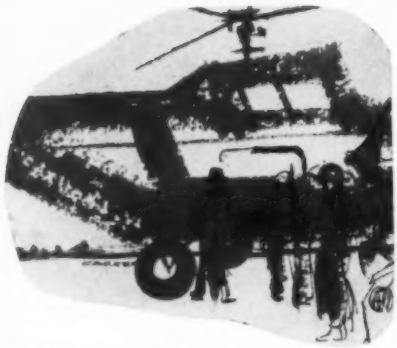
on schedule. Any changes in flight plans should be made before departure. A small formation may redirect its course in flight to alternate enplaning sites, but withdrawal aircraft must be able to land immediately on arrival in the objective area. Landings will be coordinated with appropriate elements of the security force. In unusual situations, or when delivery takes place by landing aircraft instead of parachute, the aircraft may remain at the landing site to await the return of the raiders.

Tactical air control personnel will assure effective air support and maximum cover during the withdrawal. In the final stages of enplaning, an **air coordinator** in an orbiting aircraft may assume control of combat air support. Plans for enplaning the last elements of the security force will be arranged by the loading area commander and the commander of the withdrawal force. They must balance factors of timing and flight, ground security and air support.

PLANNING

The decision to launch a raid of these proportions is to be made only at army or theater level. Targets must be important enough to justify the expense, effort and risk involved. Normal strategic targets, such as important supply dumps, communications centers and power installations are possible objectives — especially if they are concealed or protected from bombing attack. An important source of CBR materiel or a factory for mass-destruction weapons offers rich dividends. If the position of such installations is uncertain, raiders might be used to locate them exactly and to destroy or report them. The German rescue of Mussolini and the Allied attempt to kidnap Rommel suggest high-ranking enemy officials and commanders as potential objectives. Indeed, the possibilities — especially in the loose dispositions and fluid movement of an atomic war — are limited only by the audacity of the men who plan and the efficiency of the men who fight.

In designing the raid itself, imaginative foresight and exact planning are indispensable. We must expect to meet the unexpected, but improvisation should be kept to a minimum. We dare not trust to luck. Essential prerequisites are adequate withdrawal loading sites, and air superiority over the objective and loading areas and the routes to and from them. We must take into account all available information about objectives, enemy dis-



positions, terrain and weather; and we must be ready to adjust our plans to any last-minute intelligence. Detailed alternate plans will be worked out to overcome likely obstacles in executing the raid. Coordination of the raiding and transport elements and the supporting arms must be perfect.

Raid techniques will vary with the size of the raiding party. Small units must rely almost exclusively on secrecy, surprise and speed. Much greater freedom in action and timing is permitted the large, well-armed unit which can succeed through sheer force of arms. Greater freedom of action is also possible when the objective is isolated from other hostile installations. When the region is undeveloped and thinly garrisoned — among mountains, jungles, forests and wastelands — overland withdrawal to a point of safety can be followed by a more deliberate air withdrawal.

While the large force can count on more elaborately prepared withdrawal loading sites or even a captured airfield, the small unit has to make its own airfield — and make it in a hurry. Terrain involving extensive improvements or excessive hazard to aircraft is unacceptable. But aircraft like the helicopter, the C-119 and C-123, and small army planes like the Beaver and Otter can land and take off on most unpromising terrain — and even more versatile and hardy craft are on the way.[1]

A single withdrawal loading area, containing all loading sites and close to the objective, promotes simplicity, economy and speed. The more compact the area, the more easily it can be secured. Alternate areas will be selected in order of preference, determined by terrain, enemy dispositions and distance from the objective. Alternate sites and runways are also advisable in case the principal sites or runways are blocked by accident or enemy action.

Timing is all-important. The enemy must not have time to react, and withdrawal should follow delivery as soon as possible. The first hours of light are best for raids. Occupation of the withdrawal loading area at dawn will insure its suitability; early morning withdrawal permits maximum air support and prevents delay caused by darkness. The activities of raid and transport forces must be closely synchronized. Repeated rehearsals are imperative: these should stress enplaning under varying conditions of terrain, organization and enemy activity.

This, then, is air withdrawal. It represents relatively unfamiliar techniques, and for that reason may seem impractical

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LT COL LEHMAN H. JOHNSON JR. is well aware of the necessity "of devising workable techniques to withdraw airborne troops from a raid."

He was a company commander and a battalion exec in the 11th Airborne Division during World War II, serving in the campaigns on New Guinea, Leyte and Luzon. In Korea he served as Senior Advisor to the 7th ROK Division. A graduate of the Associate Advanced Course, TIS, Col Johnson is now Deputy Commander, Special Troops Command, Ft. Benning.

[1]See What's New: YC-130 Cargo Aircraft, *The Infantry School Quarterly*, January 1955, p. 58. For detailed discussion of the advantages and disadvantages of helicopters in this role, see "Raid From the Sky," *The Infantry School Quarterly*, October 1953.

or hopelessly complicated. In reality it is a simple and logical development of the airborne raid as we now practice it. But air withdrawal gives the old fashioned raid new ranges, new targets, new speed.

The truly original fighter is not only the man with new weapons. He is also the man with the ingenuity to devise new techniques for old ones. The mounted knights who broke before a handful of archers at Crécy and Agincourt were familiar with the bow and arrow — but they had not expected the bow and arrow to be used in just that way. To us, the airborne raid is familiar, but we must not permit familiarity—or the fascination of newer weapons and tactics — to blind us to its potentialities. We cannot let inertia or shortsightedness prevent us from exploiting them. I do not think we will. I believe that this blueprint for air withdrawal is a blueprint for the future, and that my story, which began with a fiction, will end an accepted fact.

SLAUGHTER BY THE LEVEE

It is the morning of 8 January 1815, and chill winds blow from the Gulf right into New Orleans. Andrew Jackson, the man who broke the back of the Creeks last summer, stands waiting by the levee in a leather cap and a short Spanish cloak of old blue cloth.

He commands a force of 4,000 Americans—citizens, slaves, sailors, plus 2,000 Kentucky riflemen, dead shots every one. He deploys the latter along hastily-prepared earthworks, ordering some to fire only at officers, others to cut down the artillerymen —the remainder to rake the close-packed ranks of the Infantry.

On the British side, General Packenham with 10,000 veterans of the Napoleonic campaigns has grown tired of delays. Contemptuous of the American rabble, he orders a frontal assault in close formation. Somewhere at sea a ship is racing across the Atlantic with the news that a peace treaty was signed Christmas Eve and that the war is already over.

Drums beating, the English advance. At 200 yards a Kentucky rifle speaks, then another, and another. General Packenham falls from his horse with a leaden ball in his head as the shower of deadly bullets swells into a tempest. The British line slows, stops and wavers; brave hearts and iron discipline are not enough to counter these straight shooting firebrands. Soon Wellington's heroes are huddling in helpless, bewildered groups. By the time the signal comes to withdraw 3,336 of them lie dead or wounded.

* * * *

At the cost of 21 casualties, New Orleans had been saved and General Jackson stood with one foot in the White House—Cpl Frederic R. G. Sanborn.

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Attention: Deputy Director for Extension Courses

Sharpening Up

LT JOHN C. MEEHAN

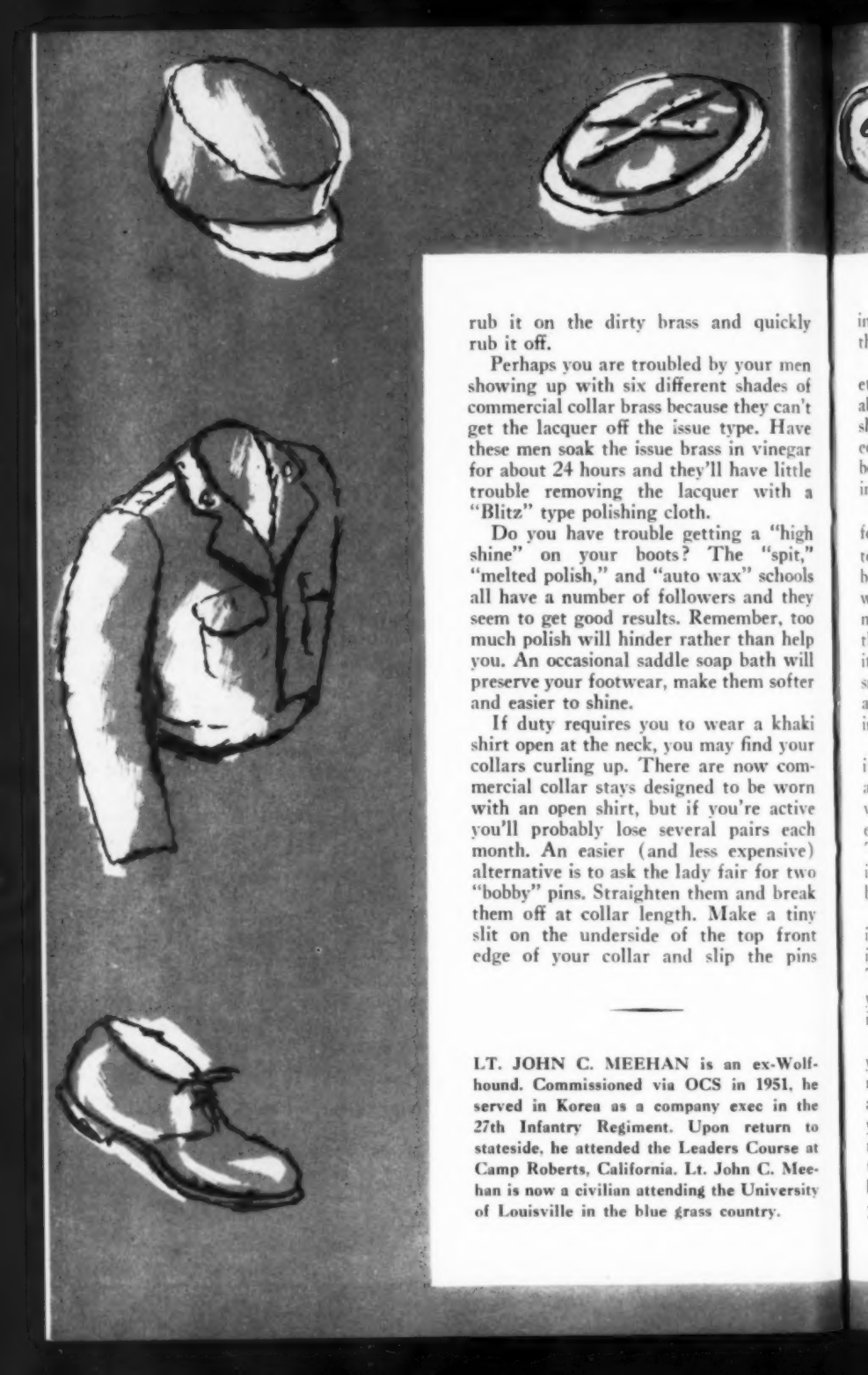
AN Infantryman never stops learning. He keeps up to date on new tactics, weapons, techniques and better methods of doing his job.

How about personal appearance? Few Infantrymen have to be convinced of the importance, the absolute necessity, of neatness. Soldiers, even more than men in other professions, are judged by their personal appearance.

Here are a few tricks of the trade which lead to a better appearance. They are not original, but may help you make a good impression on superiors and subordinates alike.

In any discussion of neatness the question always arises, "Should I go to a tailor?" By all means, consult one if you can afford a "tailor made" uniform. If you make your purchases at the Quartermaster Store — have a tailor alter your uniforms to give you the best possible appearance. If nature has endowed you with eight-inch shoulders, it's no sin to have modest shoulder pads sewn into your coats.

Do you spend too much time polishing your brass? Try this — buy a can of "glass wax" and keep a small amount of it handy in one of the plastic bottles that are so popular today. To clean brass, put a small amount of the wax on a cloth,



rub it on the dirty brass and quickly rub it off.

Perhaps you are troubled by your men showing up with six different shades of commercial collar brass because they can't get the lacquer off the issue type. Have these men soak the issue brass in vinegar for about 24 hours and they'll have little trouble removing the lacquer with a "Blitz" type polishing cloth.

Do you have trouble getting a "high shine" on your boots? The "spit," "melted polish," and "auto wax" schools all have a number of followers and they seem to get good results. Remember, too much polish will hinder rather than help you. An occasional saddle soap bath will preserve your footwear, make them softer and easier to shine.

If duty requires you to wear a khaki shirt open at the neck, you may find your collars curling up. There are now commercial collar stays designed to be worn with an open shirt, but if you're active you'll probably lose several pairs each month. An easier (and less expensive) alternative is to ask the lady fair for two "bobby" pins. Straighten them and break them off at collar length. Make a tiny slit on the underside of the top front edge of your collar and slip the pins

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LT. JOHN C. MEEHAN is an ex-Wolfhound. Commissioned via OCS in 1951, he served in Korea as a company exec in the 27th Infantry Regiment. Upon return to stateside, he attended the Leaders Course at Camp Roberts, California. Lt. John C. Meehan is now a civilian attending the University of Louisville in the blue grass country.

in neatly. The collar stitching will hold them in place.

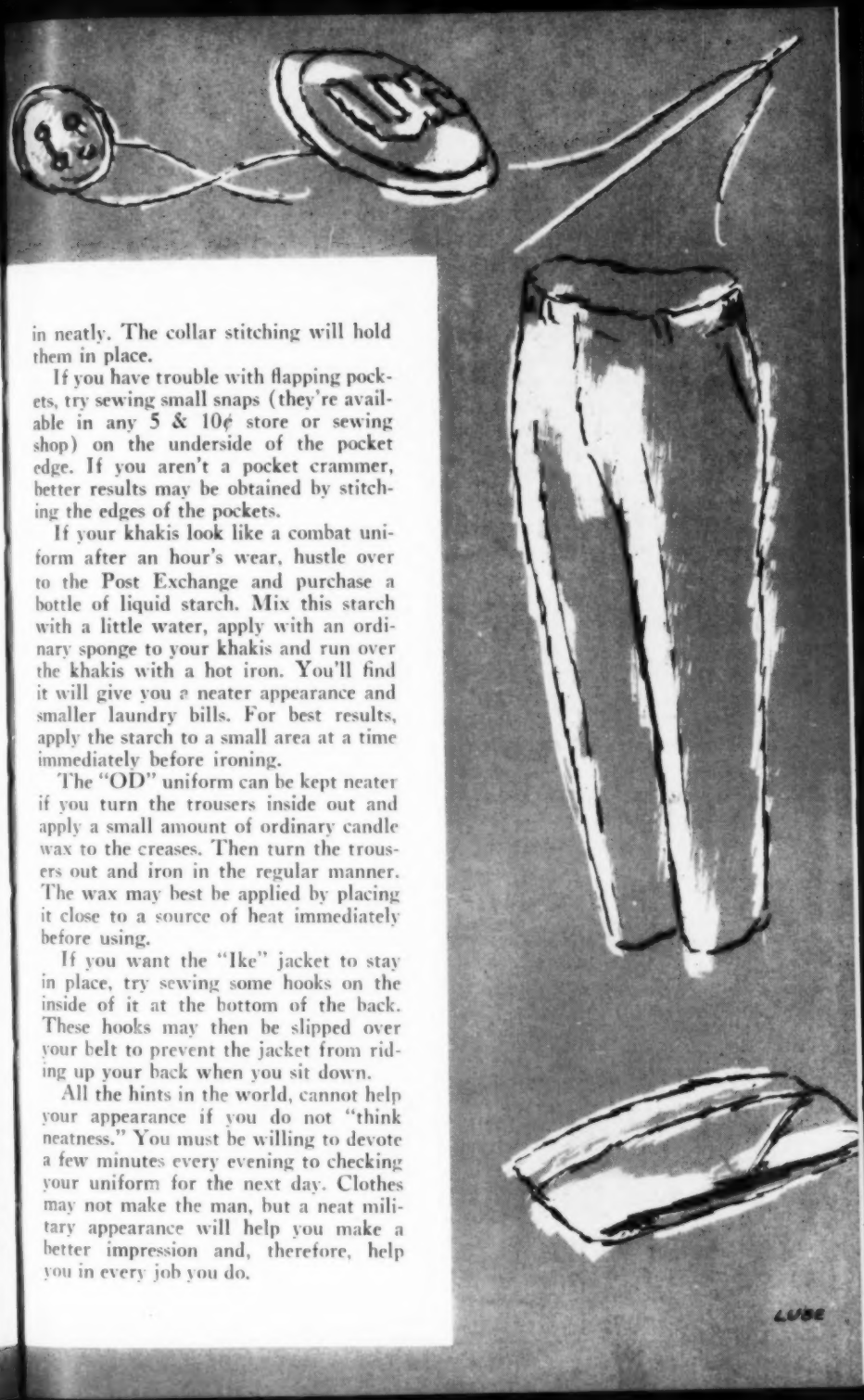
If you have trouble with flapping pockets, try sewing small snaps (they're available in any 5 & 10¢ store or sewing shop) on the underside of the pocket edge. If you aren't a pocket crammer, better results may be obtained by stitching the edges of the pockets.

If your khakis look like a combat uniform after an hour's wear, hustle over to the Post Exchange and purchase a bottle of liquid starch. Mix this starch with a little water, apply with an ordinary sponge to your khakis and run over the khakis with a hot iron. You'll find it will give you a neater appearance and smaller laundry bills. For best results, apply the starch to a small area at a time immediately before ironing.

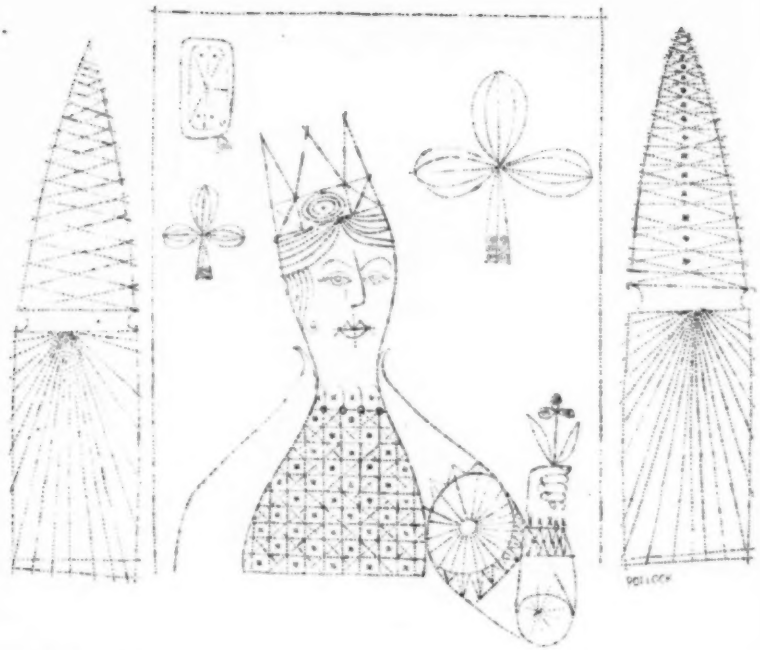
The "OD" uniform can be kept neater if you turn the trousers inside out and apply a small amount of ordinary candle wax to the creases. Then turn the trousers out and iron in the regular manner. The wax may best be applied by placing it close to a source of heat immediately before using.

If you want the "Ike" jacket to stay in place, try sewing some hooks on the inside of it at the bottom of the back. These hooks may then be slipped over your belt to prevent the jacket from riding up your back when you sit down.

All the hints in the world, cannot help your appearance if you do not "think neatness." You must be willing to devote a few minutes every evening to checking your uniform for the next day. Clothes may not make the man, but a neat military appearance will help you make a better impression and, therefore, help you in every job you do.



THE QUEEN



AND

THE CARTRIDGE

THE Queen of Battle is — let us confess it — fickle. Yesterday's favorites go into banishment tomorrow, replaced by youngsters fresh from the laboratory or the testing field. Latest to fall from grace is the M2 ball, the rifle round which, with various modifications, has served her faithfully for nearly half a century. Its successor? A brash new round, the T65[1]. Probably not for use with the M1, the T65 will load the army's new rifle, whether it be the T44,

CAPT ARTHUR R. UNDERWOOD JR.

the T47 or the FN. And Her Majesty's reason for preferring this upstart? The M2, she grumbles, was too tall!

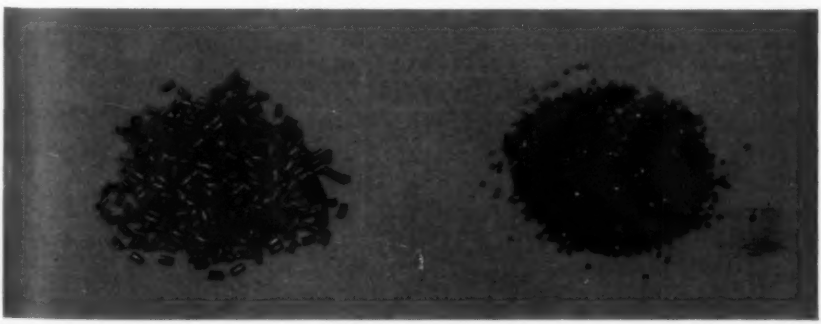
"But can a shorter round pack the same punch as the M2?" you ask. That depends on the powder. In the past, cartridges have been invented to fit new rifles and rifles to fire new cartridges. The T65 is perhaps the first cartridge in history designed for a new *powder*.

This newcomer is "ball powder," adopted by the army in 1947 and used in carbine cartridges during World War II. The single perforated grain powder employed in the old M2 ball is tubular, resembling small fragments of macaroni. The grains of ball powder are spherical[2] — hence their name. This shape has one drawback. As the ball burns from the surface towards the center, the burning area necessarily diminishes, as does the quantity of gas produced and the pressure on the base of the bullet. This is called "degressive" burning. Perforated grain powder burns at a steady neutral rate, the shrinking of the outer surface offset by the expanding burning surface inside its hollow tube. But the rifle really needs "progressive burning," producing an ever-increasing volume of gas in order to maintain pressure on the bullet as it moves farther and farther down the barrel. A series of experiments and tests conducted in the heat of World War II at last produced a progressive-burning ball powder. Each grain absorbs a coating of nitroglycerin, which increases its total energy, and another of deterrent which slows up combustion near the surface. Thus the burning *rate* increases as the burning area grows smaller. The depth of the coating is carefully regulated to ensure the desired progressive rate.

So treated, ball powder performs better ballistically than any other powder. It does the same work as single perforated grain powder, but in smaller quantities. Thus, when the old .30 caliber cartridges were loaded with ball powder to present ballistic specifications, a full half-inch gaped between the powder and the base of the bullet. This meant that Army Ordnance could design a new cartridge half an inch shorter and 10% lighter than the M2 ball. This, in turn, means savings on brass, a lighter load for the Infantryman who totes his own ammo, and precious extra room in mass wartime shipments when every inch of space counts.

How does the new round look? Except in length, it duplicates the rimless centerfire cartridge of the M2 ball. The

On the left is the "grain powder" used in the old M2 ball ammunition. The "ball powder" on the right is from the new T65 cartridge.



[1]Official nomenclature is Cartridge NATO 7.62-mm.
[2]For faster burning, the grains of ball powder are sometimes flattened.

non-corrosive primer adopted by the army in 1947 is retained. It has proven its excellence in combat and meets every army specification regarding storage, hangfires and misfires.

How does the T65 behave? Loaded with the 165 grain armor-piercing bullet, it achieves a muzzle velocity of 2,785 feet per second. Loaded with either the 173 grain M1 ball or the 150 grain M2 ball bullet, it matches the ballistics of our present ammunition.

Add all this together and the total equals the best small arms cartridge in the world—just now. But we know that the Queen of Battle will not stay satisfied for long. Where do we go from here? What developments should we look for in new small arms ammunition? Well, let's construct an X Round — the Round of the Future.

Obviously we want to use ball powder. The discharge will be flashless since the propellant charge will burn completely by the time the bullet leaves the muzzle of the rifle. Since ball powder is a chemical compound with no impurities, the discharge should be smokeless too.

The cartridge case? Why not use a plastic or stiffened fibrous material which would disintegrate upon discharge? This would eliminate brass — an immense saving — simplify bolt mechanism and locking procedures, and end ejection and extraction worries forever. Of course, the primer would have to be non-corrosive and the same material as the cartridge case. Indeed, this disintegrating material could form part of the propellant charge.

Lastly, we come to the bullet itself. Should it be ball or explosive? The answer seems plain: the explosive bullet is dangerous to handle and contravenes the Geneva Convention, while long use has perfected the ball and proven its worth.

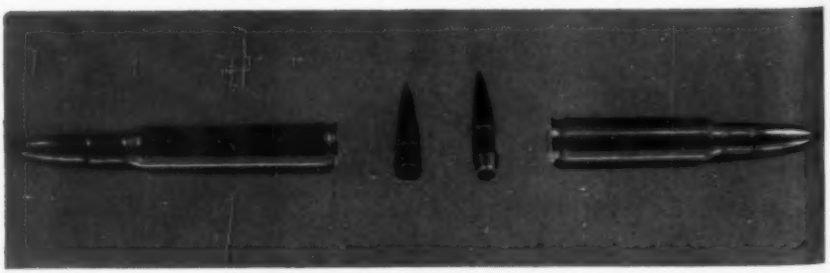
Of course, all this is guesswork, not prophecy. Who can predict what improvement will next take the fancy of the Queen of Battle? In one thing only is she consistent: that in the weapons — as in the men — that serve her, she demands the best.

CAPT ARTHUR R. UNDERWOOD JR. a 1949 graduate of the United States Military Academy, presents his second Quarterly article in this issue. "The Queen and the Cartridge" tells us about the newly developed .30 cal. cartridge.

Capt Underwood is assigned to the Small Arms Committee of the Weapons Department, TIS. His previous article, "Command the Trigger," and details on his career are in the April 1954 Quarterly.

capt carole r. reed

Shown here is the T65 ball cartridge (right) and the M2 ball cartridge (left). At left center is the familiar M2 ball bullet. The T65 boattailed ball bullet is at right center. The latter is also manufactured with a flat base similar to, but larger than, the M2 ball bullet.



why not brevets?

capt carole r. reed

DID you know that the President of the United States is authorized to grant brevet promotions "for distinguished conduct and public service in the presence of the enemy"? Are you familiar with the regulation[1] which permits officers to claim the difference in pay between their own and a higher rank held in combat? The answer to both questions should be yes. For however obscure these provisions may seem, they are important to you — and to the United States Army.

I believe that these regulations — combined, modernized and applied to times of peace — could solve one of our major personnel problems: that of the soldier who performs the duties of a rank higher than his own. I believe these soldiers — officers and enlisted men — should receive the full rank and pay authorized for their positions. But they should hold this rank by brevet — not by commission.

History of the Brevet.

Just what is a brevet? For the answer, let us glance at its history — a fasci-

[1] AR 35-1620, par. 3.

nating story which throws new light on our own problem.

"Brevet" derives from the Latin *brevis*, "short." Originally, it meant a parchment containing a notification, a writ issued by a sovereign or state.

In medieval France, officers were appointed by great nobles who contributed levies to the royal army. These officers, however, commanded only their own local troops. It soon became necessary for the king to issue "brevets" confirming their authority throughout his army.

English regiments were also raised by noblemen. But even with the king's commission, the officers' authority was limited to their regiments. When several units served together, differences over command inevitably followed. In 1692, William II instituted the brevet. This bestowed authority valid in all branches and corps. A captain brevetted to major continued to perform a captain's duty within his regiment. But serving with other or mixed troops, he assumed his brevet rank of major. The brevet rank was abolished in the days of Queen Anne.

The rigid hierarchy of the British Army permitted promotions only when vacancies occurred within the regiment. Amidst the rigors of the Peninsular Campaign, the Duke of Wellington found himself without means to reward heroism in the field. At his request, the brevet was revived. Wellington knew when to give, when to withhold. In his hands, the brevet became the dream of every subaltern, "the greatest stimulus which the army received."[2]

Between 1775 and 1776, brevet rank was officially authorized in our Articles of War, copied from the British regulations. Revised in 1806, Articles 61 and 62 stated that officers assume brevet rank on courts martial and on detachments composed of different corps, but not within their own corps. When different corps serve together, the officer "highest in the rank of the line" commands the whole. But are courts martial and detachments intended as the limits of brevet authority or only its special prerogatives? If limitations, do they apply to general officers? Does "rank of the line" — distinct from rank in the staff — include brevet rank? These were points over which soldiers and statesmen wrangled for decades.

The natural result was legislation restricting the privileges and authority of brevet rank. Another cause of the brevet's decline was lavish distribution after the Mexican and Civil Wars. "Brevets," wrote General Scott, "are the cheap and peculiar rewards of military prowess or genius. But it does not follow that they are to be cheaply won."

General James A. Garfield, later President, complained that ". . . it is now impossible to judge from an officer's title or uniform what his actual position and command may be. Ideas of relative rank are confused and lost. Captains command majors and colonels, and a colonel not unfrequently finds two or three brevet generals among the company and field officers of his regiment."[3]

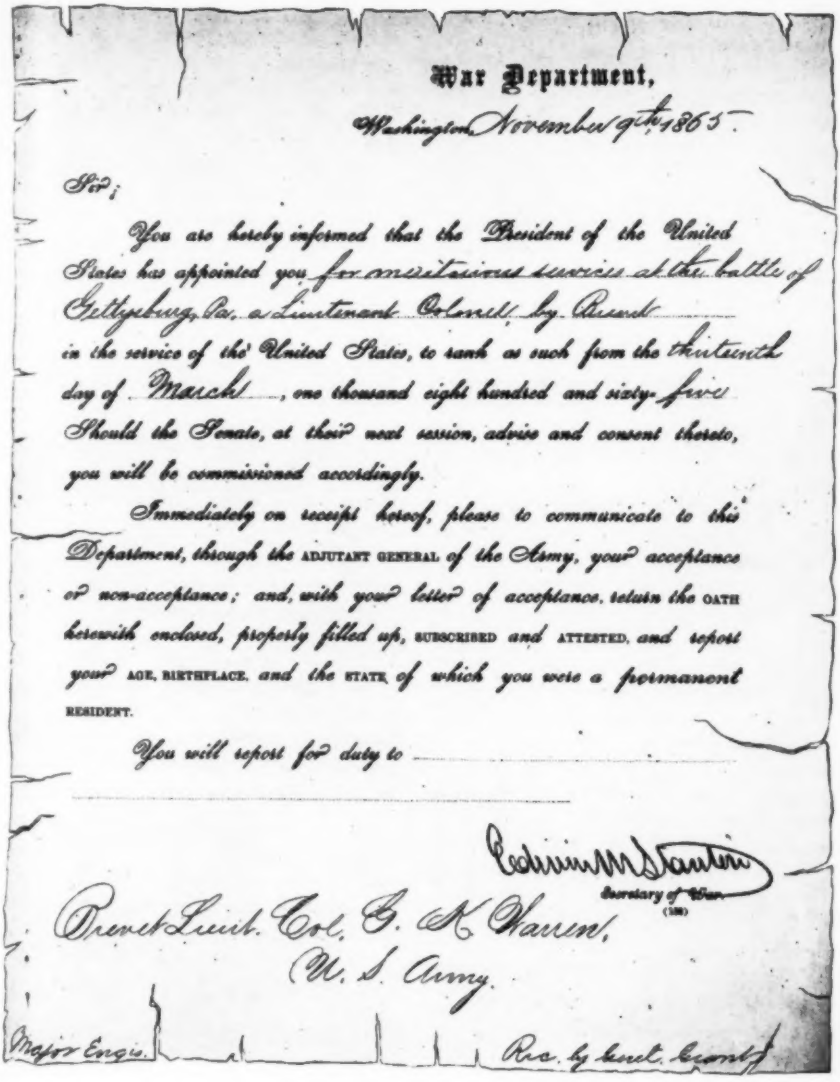
The situation was plainly intolerable. An act of 1869 repealed Article of War 61. In the future, brevets would only be

WHAT IS A BREVET? What is its origin? Is it still in effect today? Captain Earcle R. Reed sheds light on this fascinating subject in "Why Not Brevets?"

Capt. Reed, Project Officer in OCAFF Board #5 at Fort Bragg, N. C., is a graduate of the Associate Advanced Course, TIS. He received his commission in 1942, and has spent four years as an ROTC instructor. He served with the 279th Infantry Regiment in Korea.

[2]Testimony of Lt Gen Lord Fitzroy Somerset, K.C.B., before the Commissioners on Naval and Military Promotion, 1840.

[3]Lt Col Frederick B. Wiener, "Mex Rank Through the Ages," *Infantry Journal*, Sept.-Oct., 1943.



War Department,

Washington November 9th 1865.

Sir;

You are hereby informed that the President of the United States has appointed you for meritorious services at the battle of Gettysburg, Pa. a Lieutenant Colonel by Brevet in the service of the United States, to rank as such from the thirteenth day of March, one thousand eight hundred and sixty-five. Should the Senate, at their next session, advise and consent thereto, you will be commissioned accordingly.

Immediately on receipt hereof, please to communicate to this Department, through the ADJUTANT GENERAL of the Army, your acceptance or non-acceptance; and, with your letter of acceptance, return the OATH herewith enclosed, properly filled up, SUBSCRIBED and ATTESTED, and report your AGE, BIRTHPLACE, and the STATE of which you were a permanent RESIDENT.

You will report for duty to

Edwin M Stanton
Secretary of War

Brevet Lieut. Col. G. K. Warren,
U. S. Army.

Major Engrs.

Rec. by Lieut. Comdg

Above is the notification sent by President Andrew Johnson to Gouverneur K. Warren offering him an appointment to the rank of lieutenant colonel by brevet "for meritorious services at the Battle of Gettysburg." After the war, paymasters, quartermasters, commissaries, surgeons — even recruiting officers — received brevets for "faithful and meritorious services during the war." Multiple brevets were common, and captains rose to brigadier generals overnight. Most non-combatant brevets dated from 13 March 1865, which military wags named "the bloody 13th of March." (Reproduced by courtesy of Mr. Gerald C. Stowe, Curator, USMA Museum.)

conferred in time of war, for "distinguished conduct and public service in the presence of the enemy." They would give command and precedence only on special assignment of the President — and even then without pay.

Finally in 1870, officers were forbidden to wear uniforms of brevet rank on duty or to be addressed by brevet titles. Seven years before, the President was authorized to bestow "medals of honor," and decorations quickly replaced brevets as the appropriate rewards of courage and public service.

Thus emasculated, brevets survive in the law books to this day. But, as General Fry wrote sadly, they "have lost the privileges which were worth claiming, the rights which were worth exercising, and the honors which were worth contending for."[4] The last—and highest—brevet awarded in this country was conferred in 1918. Retiring as Chief of Staff, General Tasker H. Bliss was replaced by Peyton C. March. Counting General Pershing, the army quota of two full generals was complete. But as American representative on the Supreme War Council at Versailles, it was desirable for General Bliss to retain his four stars; and for this purpose, the brevet was briefly resurrected.

That is the story of the brevet. What is the moral? Is there something wrong with brevets — or does the root of the trouble lie deeper?

The brevet of the past divided rank from the responsibilities and authority of office. It filled the army with officers who performed the duties of a lower grade while holding the title of a higher one. Naturally they were discontented. They strove to secure the authority, prestige and pay implied in their brevets — and the result was chaos.

This, then, is our moral — that rank and office are not to be divorced.

The Brevet Has A Place in Today's Army —

Today our problem is exactly reversed. Throughout the army, officers and enlisted men are doing jobs for which higher ranks are authorized. But we are violating the same rule — we have separated rank from office.

"To reward brains, talent and extra effort . . . is

To assign a soldier work involving responsibilities, expense and skills commensurate with a higher grade is neither just nor efficient.

The "career open to talents" is not only a principle of American democracy — it is also sound personnel policy. To reward brains, talent and extra effort — to sharpen competition — to keep promotion flexible — is the best way to improve performance. The U. S. Army is one of the world's biggest businesses. It cannot afford to ignore lessons big business learned generations ago.

Yet we cannot grant wholesale permanent promotions. The army has neither the vacancies nor the money. Often the soldiers themselves have not sufficient time in grade. Fully qualified for a certain job, they may not be ready to assume its authorized rank in other positions.

These men should be classified as BREVETS, defined as "those officers and enlisted men, who, by order of a superior officer in combat or in time of peace, serve in positions of higher ranks or grades than their own." They should be promoted by brevet and receive the pays and allowances of their new rank. They would continue to hold this rank

[4]Colonel James B. Fry, *The History and Legal Effects of Brevets*, Van Nostrand, New York, 1877. Colonel Fry, the standard authority on brevets, was himself a brevet brigadier general.

until permanently or temporarily promoted to it, or until relieved from that assignment.

The last of U. S. Army brevets was actually awarded on this principle. Although cited for his distinguished services, General Bliss was brevetted primarily because of his position on the Supreme War Council. To prove that the principle works on a large scale, we have only to examine the present English system of "substantive" rank — a program which has proved its worth over a period of 11 years.

Economy, political considerations and the expansions and contractions of the military, plus other factors equally applicable to the U. S., demand that the British fill numerous vacancies with junior officers. These officers not only wear the insignia of their substantive rank but assume its responsibilities, privileges and authority. Such temporary promotions are especially useful in international military activities, where British officers are enabled to meet Allied colleagues on an equal footing.

The biggest objection to brevet or substantive rank is the dark prospect of reverting to a lower grade. But orientations and familiarity with the system should prevent undue shock to military egos. Reversion would soon become an accepted routine.

Who should grant brevets? Some will advocate control by Department of the Army, some at theater level, some by army or corps commanders. In this instance, I believe decentralization means simplicity. Regimental, battalion and unit commanders are familiar with the tables of organization prescribed for their units. What more efficient way to create brevets than a simple morning report entry stating that a vacancy is filled by a soldier of lower rank than is authorized? Confirming authority — the next higher headquarters authorized to publish special orders — would then authenticate the appointment. The same procedure would announce the completion of the assignment, and the soldier would revert to his actual rank. Naturally, commanders will confer the brevet only when the recipient has proven himself in his new position.

is the best way to improve performance."

For economy, we could use present insignia for brevet grades. Should it prove desirable to distinguish brevet from permanent or temporary rank, brevet officers might reverse the location of branch and rank insignia on their collars. Enlisted men might wear brevet insignia on a different part of the uniform. After the assignment ends, a single brevet insignia might be worn centered on a pocket, lower sleeve or equally conspicuous point, and regular insignia again worn where prescribed.

At a time when decline in the army's morale is causing wide concern, a program of brevet rank deserves careful, detailed consideration. It affects a most influential group — outstanding soldiers who have proven that their abilities exceed their present rank. A proud distinction and just reward for them, the brevet would represent to others an inspiring and attainable goal. The whole service would benefit by keener competition, increased efficiency and higher morale.

Today, as in the days of Wellington, brevet promotion could become "the greatest stimulus which the army received."

Publication of this article is not necessarily to be interpreted as reflecting the thought of The Infantry School or *The Infantry School Quarterly*.

The following information provides a means of keeping up-to-date on matters of professional interest.

NEW AND APPROVED

106mm Recoilless Rifle Platoon. The Recoilless Rifle Platoon has been redesignated "Antitank Platoon." The organization of the platoon is as follows: the number of personnel has changed from 1 officer and 38 enlisted men to 1 officer and 41 enlisted men. Both the 75mm and 105mm recoilless rifle sections have been replaced with antitank sections armed with 106mm recoilless rifles. The sections consist of two antitank squads and a section headquarters.

The platoon is equipped with six 106mm recoilless rifles, assigned one per squad. There is no change in the communications. In platoon headquarters the transportation consists of one ¼ ton truck with ¼ ton trailer and two ¾ ton trucks with ¾ ton trailers. The ¼ ton truck and trailer are used for command and reconnaissance. The ¾ ton trucks and trailers are used for ammunition resupply. Each section headquarters has a ¼ ton truck with ¼ ton trailer assigned to it for resupply of ammunition.

The primary mission of the antitank platoon is destruction of enemy tanks with a secondary mission of providing close support for the rifle units.

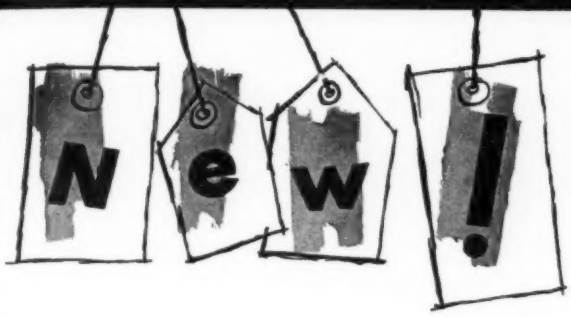
The method of tactical employment for the antitank section is the same as for the 105mm recoilless rifle section. The selection of firing positions remains the same as with the 105mm recoilless rifle when employed on the vehicle mount. However, the 106mm recoilless rifle may be mounted on a ground mount and moved for short distances to get it into a better firing position. The distance this weapon can be moved on the ground is limited due to its weight.

•

Comforter Bag. A new comforter sleeping bag was recently adopted to replace the wool sleeping bag and blanket for use in the temperate zone. A modified comforter bag, containing increased insulation and several minor modifications, underwent test during spring, summer and fall of 1954.

•

New Order. President Eisenhower has recently signed an order that will double punishment of soldiers going AWOL. Under the new order, a person "over the hill" for 30 days or more can get a dishonorable discharge and a year in prison. The order also included many new provisions for forfeiture of pay.



TIPS

Home Loans. The National Housing Act of 1954 contains a provision for home-loan benefits to career servicemen similar to those given to WW II and Korean veterans. To qualify, a serviceman must execute a certificate from the Secretary of Defense, indicating that he requires housing, that he is currently on active duty and that he has been for more than two years.

Loans can be insured by the Federal Housing Administration Commissioner up to 95% of the FHA-appraised value of the property but not to exceed an insured loan of $17,100. Both the borrower and the property must meet FHA requirements.

DD Form 802 will be used in making the request and will serve as the certificate of eligibility. DD Form 803 will be used to notify the FHA of the termination of ownership.

Persons called to active duty for training purposes only, are not eligible for the certificates. Likewise, the home loan insurance is to be used only for the purchase of a one-family residence to be occupied by the serviceman and his family as his home.

•

FM Receiver-Transmitter. Service-test models of Radio Set AN/PRC-15, an ultra-portable, subminiature, FM receiver-transmitter for possible use in the most forward elements of combat units, now are being made available to interested using agencies.

•

Furlough Rates Continued. U. S. railroads will continue to provide reduced furlough fares for military personnel traveling in uniform at their own expense. The plan was scheduled to expire 31 January 1955, but has been extended for another year. The tax-exempt round-trip fares, good in coaches only, will continue at the rate of 2.025 cents a mile or less, which results in a saving of up to one cent a mile.

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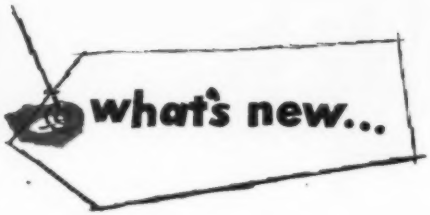
UNDER STUDY

Mechanized Flame Thrower. Plans for a new mechanized flame thrower that will project a flame 200-270 yards, with a firing time of approximately 25-28 seconds, are being studied by the army.



UNDER TEST

Cold Weather Headwear. New developmental items of headwear were given comparative test in Korea and in the Alpine and Arctic areas, in an effort to obtain a cold weather cap compatible for wear with the steel helmet. The most promising item combines the full ear flaps of the standard pile cap and the shape and appearance of the field cap.

•

Remote Control Radio. Successful operational tests of REMOTE CONTROL AN/GSA-7 with two AN/PRC-10 radio sets have been conducted. The AN/GSA-7 is a device for remotely controlling and talking over a radio transmitter of the push-to-talk type from a magneto-type telephone instrument or switchboard which will allow radio-wire integration, permit inter-communication between radio networks, and provide remote control facilities for a radio set on a simplex (one way reversible) basis.

•

MANUALS

Revised. FM 23-55, "Browning Machine Guns, Caliber .30, M1917A1, M1919A4 and A6." This manuscript has been completed at The Infantry School and forwarded to OCAFF for approval and submission to The Adjutant General for printing. If approved, this manual should be ready for distribution in about three months.

•

Changed. FM 31-50, Change No. 2, "Combat in Fortified Areas and Towns." This change presents new doctrine for the assault of varied types of enemy fortification, which are considered to be more flexible than the methods described in the present manual. It is the result of experiences in attack against fortified positions during WW II and the Korean conflict.

•

Special Text ST-( ), "Hits Count," has been forwarded to OCAFF. In order to obtain wider distribution for this publication, it will be published as a Department of the Army pamphlet and given army-wide distribution. This text is a summary of Infantry School rifle marksmanship instructor's techniques, written from the view of the coach.

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TRAINING CIRCULARS

TC-21, "Use of the M34A1 Sight Unit with the 81mm Mortar." This circular outlines the techniques for using the 4.2 inch type mortar sight on the 81mm mortar.

NEW

Maintenance of Property Records Made Easier. The revised edition of SR 735-30-1, 23 Aug. 54, is designed to simplify the maintenance of property records by unit[1] commanders. More specifically, the SR makes the following changes:

1. Requisition file and register as well as the voucher register are no longer maintained by the supply personnel in T/O&E units. Voucher numbers are now assigned to necessary documents by the organization's supply officer and not by unit supply personnel. Only documents that require posting in the property book will be vouchered.

2. Jacket files of hand receipts for property issued and held on loan are no longer required. The Infantry School, however, recommends they be maintained for the protection of the commander.

3. A suspense file must now be maintained by unit supply personnel. This is an informal file and contains the records of unfinished (or incomplete) supply transactions. Once the transaction is complete, the suspense document(s) is destroyed.

4. Property turn-in tag. The replacement of unserviceable non-expendable component parts of kits, chests, assemblies, etc., is now done by use of the property turn-in tag (DA Form 1115). This tag eliminates the use of turn-in and issue slips. It is all that is now needed to accomplish turn-in and subsequent issue.

5. Requisitioning expendable items. This refers to such things as stationery, janitorial supplies, etc., which are in constant demand and are customarily issued in bulk to be used over given periods. Requisitioning of these items is now done on pre-printed issue slips furnished by the organization supply office. Unit supply personnel now need only fill in the heading, state the number of items (being requested) on hand, the number needed and necessary signature.

•

The changes referred to above should lighten the administrative load at company level. However, the discontinuance of these property records now makes it mandatory that organization supply officers maintain the following records:

1. Unit Transaction File: A separate file will be maintained for each subordinate organic or attached unit. This file will show all vouchered transactions between the two headquarters. It also serves as a voucher register since each transaction is vouchered by assigning the next open number from the file.

2. Organization Transaction File: Here will be recorded all transactions between the organization and the next higher supply echelon. A separate file will be maintained for each technical service supply officer from whom supplies are received.

3. Organization Suspense File: This serves the same purpose as the unit suspense file maintained by each company.

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[1]The terms *organization* and *unit* are applicable to the regiment and company respectively of the Infantry regiment and of the headquarters, separate battalion and company of that battalion, respectively. These terms are used as defined in SR 320-5-1, *Dictionary of United States Army Terms*, and SR 735-30-1, *Property Accountability*.

surprise packag.

THIS is a story of surprises! The first is a bomb, hidden in a brief case placed casually beneath a conference table. The brief case is the property of Count Felix von Stauffenberg, and at the head of the table stands Adolf Hitler.

The attempt costs Stauffenberg—and many more—their lives, but Hitler survives. Bedridden through the summer of 1944, he is free to devote himself to the grand strategy eh adores. Then it is that this sick mind conceives a last gamble to save the failing Nazi empire. He has gambled so often—and won. . . .

By September, Hitler's plans are set for a vast surprise attack on the American line, thin-stretched across the Forest of Ardennes. While the Allies race toward the German "west wall," Hitler gathers his last divisions. He waits. . . .

On 16 December, American troops wake to the thunder of German guns. But not until the next day do they awake to the magnitude of Hitler's surprise. For this is the Battle of the

g. . . **lt col j. w. medusky**

Bulge, biggest and costliest operation of World War II.

Hastily, SHAEF searches for reinforcements to stiffen the sagging Allied line. Only 82d and 101st Airborne Divisions are available. By December 18, the 82d Airborne, loaded on 10-ton truck trailers, has begun the cold journey to Bastogne, then north to Werbomont.

The division forms a wedge pointing southeast with its left flank along the Salm River (see Map A, page 63). Across the narrow stream, it faces the 9th SS Panzer and 62d Volksgrenadier Divisions. To the south, the 2d SS Panzer division sweeps westward, threatening to turn the 82d's flank.

On 23 December, counterattacking Americans capture not only the strategic town of Regne, but also a bewildered regimental adjutant, stranded in his motorcycle sidecar. This most important prisoner provides the third surprise, since he carries orders for an imminent German attack. In order to straighten the 1st Army's defenses, General Montgomery orders the 82d to withdraw to the low hills between Manhay and Trois Ponts, seven miles to its rear (see Map B, page 65). It is Christmas Eve . . . .

The fourth surprise is contrived, not by a count or dictator, but by a handful of American soldiers. In a battle involving more than 30 Allied divisions, it is easy to overlook them. But the engagement at Rencheux is important — not only as an example of heroism (which is not measured by statistics), but as a brilliant illustration of what a covering force can do. This is the story of that operation—of three platoons and five hours....

* * * * * *

FIELD ORDER #4, HQ 508TH PARACHUTE INF

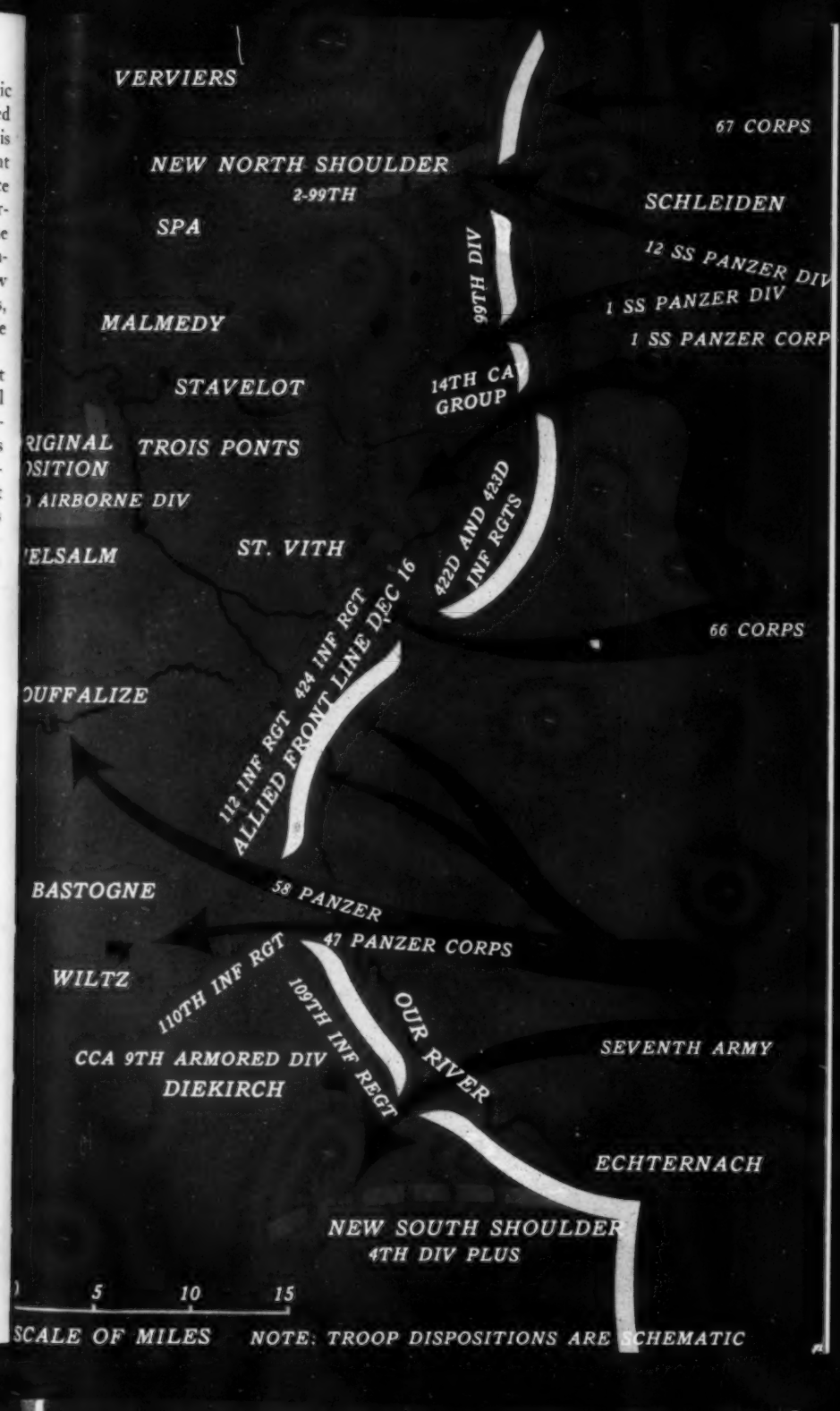
AT H HOUR ON D NIGHT 82D DIVISION WITHDRAWS TO NEW DEFENSIVE POSITIONS.... COVERING FORCE WILL CONSIST OF ONE PLATOON PER RIFLE COMPANY.

1345 HOURS 24 DECEMBER 1944.

At 1500, headquarters alerts 1st Battalion for the withdrawal. Battalion and company commanders and staff officers hurry to the rear for a quick reconnaissance. Engineers reduce the highway and railroad bridges across the Salm River to twisted iron and shattered concrete, and dot avenues of approach with mines and roadblocks. Artillery stands by to support the covering force when the enemy assault begins.[1] Swiftly, with effi-

MAP A

[1]Because of the presence of supporting (self-propelled) artillery at Goronne, additional crew-served weapons were not attached to the covering force.


VERVIERS
67 CORPS
NEW NORTH SHOULDER
2-99TH
SCHLEIDEN
SPA
99TH DIV
12 SS PANZER DIV
1 SS PANZER DIV
MALMEDY
1 SS PANZER CORP
STAVELOT
14TH CA GROUP
RIGINAL
OSITION
TROIS PONTS
AIRBORNE DIV
ELSALM
ST. VITH
422D AND 423D INF RGTS
424 INF RGT
112 INF RGT
ALLIED FRONT LINE DEC 16
66 CORPS
OUFFALIZE
BASTOGNE
58 PANZER
47 PANZER CORPS
WILTZ
110TH INF RGT
109TH INF REGT
OUR RIVER
CCA 9TH ARMORED DIV
DIEKIRCH
SEVENTH ARMY
ECHTERNACH
NEW SOUTH SHOULDER
4TH DIV PLUS
5
10
15
SCALE OF MILES
NOTE: TROOP DISPOSITIONS ARE SCHEMATIC

ciency born of long training, the battalion prepares to withdraw.

By 1700, CP and communications personnel are on their way back. As the sky darkens, riflemen and machine gunners make up their packs and shoulder their equipment. At 2045, they pick their way back to platoon and company assembly areas. Half an hour later, the battalion is lined up on the winding, hilly road. They wait for two platoons delayed by the brilliant moonlight. Finally these platoons succeed in slipping away, and at 2135 the 1st Battalion heads westward —all but one platoon from every rifle company.

Captain Benjamin Delameter, battalion exec, commands those who remain. He sets up his CP near the western edge of the Belgian village of Rencheux. With him are two radio men and a runner from each platoon. He has his orders: hold until 0315—6 hours—360 minutes.

In a line of houses on the outskirts of Rencheux, Lt George Lamm waits with A Company's 2d platoon. Before them runs the narrow trickle of the Salm with its ruined bridges. Beyond that—the enemy.

Along a road to the left, Lt Wheelock and the 3d platoon of B Company hold a line of foxholes on the hillside. Still farther left, C Company's 2d platoon, led by Lts Stevens and Kampe, stretches across another spur of the hill. In the darkness to the right of Rencheux are elements of the 112th Infantry's 3d Battalion (see Map C, page 67).

These elements are the covering force, the rear guard. Three platoons masquerading as a battalion — playing for time—with the safety of the division at stake.

It is a Christmas card night—with differences. There are the conventional stars and snow, but the windows of Rencheux are dark, and there are guns behind them. No chimes, no carols—instead, tense expectancy and a freezing cold that glues your fingers to your rifle barrel and hurts even through the numbness.

Crucial minutes drag by. Delameter sends a detail to destroy stores left in the red brick barracks across the road. At 2200, Lt Lamm reports the sound of vehicles and voices across the river—he thinks the Germans are trying to repair the bridges. Three enemy patrols have approached his position and pulled back in a hurry—presumably to report that the Americans are still in position . . . waiting. Delameter sends his report to regiment, then strolls into town to see for himself.

* * * * * *

In the abandoned house which serves as Lamm's CP, men fondle a treasured bottle of champagne, long saved for the stroke of 12 on Christmas Eve. It is not destined to be emptied.

At 2430, all hell hits Rencheux: artillery, mortars, machine guns and direct tank fire. The old houses rock to the jar of the explosions. Simultaneously, the center squad reports a smoke screen drift-

MAP B ➧

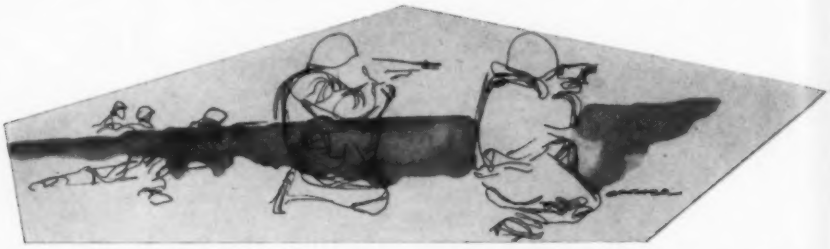
SURPRISE PACKAGES often take strange forms. LT COL MEDUSKY, as Regimental S-3, 508th Parachute Infantry Regiment, was on the scene when the 82d Airborne Division gave Hitler's crack Panzer troops an unexpected and unwanted surprise.

Colonel Medusky is a '39 graduate of the USMA, and has an M.S. degree from the University of California. He is a graduate of the Associate Advanced Course, TIS, and is currently the Executive Officer of the Staff Department, TIS.

L'AMBLEVE R.
WERBOMONT
STAVELOT
TROIS PONTS
504
505
508
325
2
504
1
325
BRA
POSITIONS AFTER WITHDRAWAL
505
XMAS EVE
GORONNE
508
RENCHEUX
3
11
MANHAY
14
9
ORIGINAL POSITIONS
2
504
325
SALMCHATEAU
2 SS
2 SS
U. S.
GERMAN
0 1000 2000 3000 4000 5000
METE

ing across the river. Lt Lamm knows that this is it—a coordinated attack with artillery, engineers, smoke troops, Infantry and armor—an attack in strength.

Lamm has twenty-four men . . . one 60mm mortar . . . two LMG's . . . two BAR's . . . . (One of his LMG's has been knocked out during the day by German tanks.) Now the tanks are lined up on the opposite bank, blasting straight into his positions, and the German Infantry pushes across the wreckage of the railroad bridge.



Lamm's platoon mans its guns, firing into solid masses of the enemy swarming over the bridge and up from the river and the smoke. But there are just too many, coming too fast.

Lt Lamm sizes up the attack and sends a runner to Delameter. But as the lieutenant steps from his CP, a stream of Schmeisser bullets tears into the door. The Germans have overrun his position.

In the uncertain glare, Lamm sees a man behind him. "Are the Germans back there, Sergeant Boone?"

The "sergeant" answers with a burst of machine pistol fire. He misses, but Lamm does not. . . . He sends his assistant, Lt Gyami, back to battalion with a runner and goes himself to check Sgt Prestos' squad on the right.

Sgt Prestos has led a squad through two campaigns. He knows that "when you got a good leader, you got a good platoon; and when you got a good platoon, there isn't much you can't do." But even a good platoon can't hold back a battalion. Sgt Prestos can handle the enemy to his front, but MG 42's[2] are raking his right flank. Lamm tells him to hold as long as possible, then pull in slowly toward the center. He races off to check Sgt Boone on the left.

He finds the sergeant behind his BAR, tearing into two long files of Germans moving straight up the road from the bridge. Flares cast a Christmas glow upon the snow, and tracers flash off the brick houses of Rencheux. The Germans come on until Boone's men can toss grenades between their files—and still they come. The squad is overrun.

It is withdraw soon—or never. The time is about 0130, and neither Gyami nor the runner have returned with orders. They never do return.

Lt Lamm calls out for Boone. The sergeant comes running through the enemy with three of his six men. They start back, fighting off the Germans behind them, fighting through Germans in front.

Blocking their path to the battalion assembly point lies Rencheux, now wholly in enemy hands. They cannot bull through. Sgt Prestos has already pulled back, 30 to 50 yards at a time, moving around past the village and down the road leading west. With the other two squads and his CP group, Lt Lamm sets off to

MAP C

[2]The German MG 42, introduced in 1942, was used as either a light machine gun, with bipod mount, or as a heavy machine gun, with tripod and telescopic sight.

the hills on the right and the regimental assembly point at Goronne.

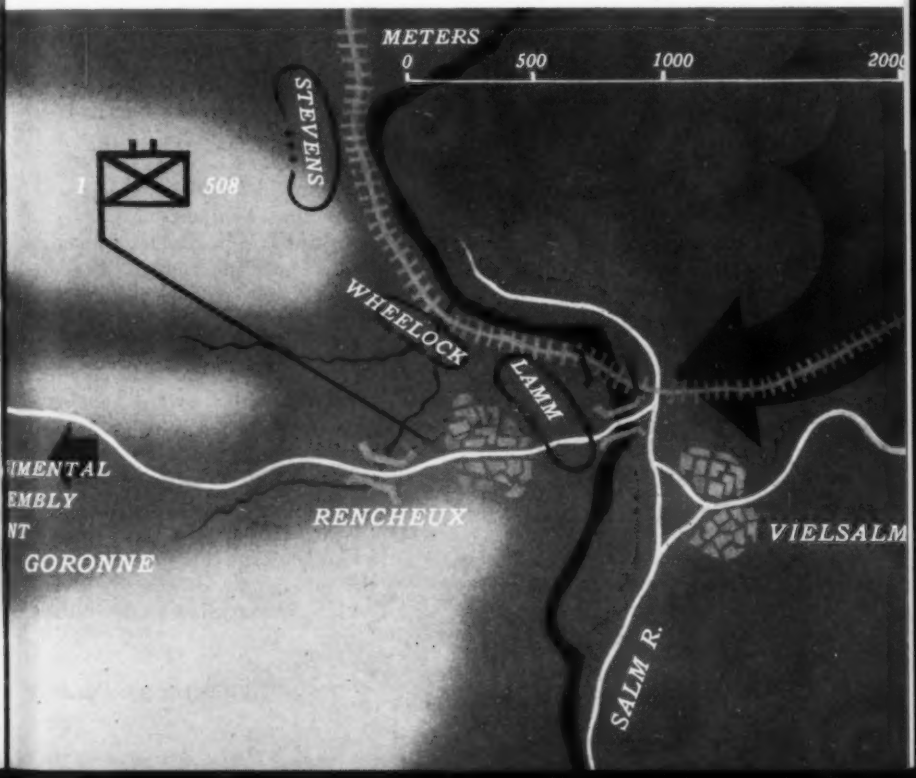
* * * * * *

Lt Wheelock of B Company is new in the regiment, even newer as a platoon leader. In fact he took over the 3d Platoon at 1600—a little more than nine hours ago. And at 2300, his assistant platoon leader was killed by an enemy patrol he was trying to ambush.

When the first enemy fire burst upon Rencheux, Lt Wheelock was moving his CP to his center squad position. The German artillery caught the little group in the open. Wheelock never saw the others again. Leaning into the barrage, the enemy Infantry charged up the hillside, and the fire fight was on.

The LMG's and BAR's of the left and center squads ripped at the Germans as long as they kept coming. After awhile, no more came. But now the Germans who have overrun A Company are hitting the flank of the right squad. The squad leader, his face torn open by a bullet, is carried off by Private Packlewitz. Packlewitz goes back to his BAR, only to return to the platoon CP with the news that the Germans are already in the right squad's foxholes. And on his heels comes Delameter's runner with orders to withdraw.

Lt Wheelock leads his platoon down a draw to cover. The wounded squad leader is with him; his other squads are intact. But the CP group and the 60mm mortar squad are missing. Lt Wheelock goes back to look for them. He finds the platoon position swarming with Germans. There is nothing to do but head back to his platoon, back towards the battalion assembly area and Goronne.



The men of C Company have been lucky. They caught the artillery fire but were never attacked. When the order comes to withdraw, Lt Stevens and Lt Kampe are able to bring back their whole platoon with only one man slightly wounded. Looking down on the battalion assembly point, they see the blaze of German tracers. Doggedly they set off cross-country for Goronne. But where is Delameter?

* * * * * *

By 0115 Delameter has received orders to withdraw. He sends out the platoon runners and leads his own CP group to the assembly point in a valley to his rear. Now he has only to wait.

To his front all is confusion—shouts and firing, moonlight, tracers, flares. He dispatches men to search the hillsides right and left for the platoons. He himself steps out onto the road.

"Baker Company, assemble here! Able Company, assemble here!"

Shouts from the Germans are his only answer. The CP group fires at the voices. Suddenly the ground around them shakes with an artillery concentration planned to catch the advancing enemy. It is near-inf 0200, and still Delameter waits.

Soon the CP group can see Germans moving against the snow and hear them chattering and calling to one another. Delameter counts three signal lights—apparently assembly points—a few hundred yards from him. Voices with heavy German accents imitate his call: "Baker Company, assemble here! Baker Company, assemble here!"

Nevertheless, some members of A Company succeed in reaching Delameter and are sent to the regimental assembly point. Next come Lt Wheelock and the B Company platoon. Finally, about 0230, Delameter and his CP group start down the road to Goronne. Soon after he rejoins the regiment, Lt Lamm arrives with the remainder of his platoon.

Lamm has been delayed. He was already well on his way when he heard behind him the unmistakeable chatter of an American LMG. Roblette and DeMario—his machine gunners, and new men both—must still be in position! Buried by a shell burst early in the fight, they had dug themselves out and put their gun back in action. And now they were carrying on their own private battle after everyone else had quit.

Lamm had disengaged. He knew that he could lead his men safely to Goronne. But he could not leave the machine gun crew behind. And so he went back toward Rencheux and shouted for his missing men through the German fire.

The US .30 stopped. Out of the dark-

ness, the two soldiers plodded toward Lt Lamm, carrying their equipment—gun and tripod and two boxes of ammunition. The gun jacket was scarred and dented by shell fragments; the men were covered with dirt; but Privates Roblette and DeMario were ready for anything their platoon leader might suggest.

"Hello, sir—what we gonna do now?"

Lamm laughed. "We're withdrawing, of course!"

"Oh," they repeated, "we're gonna withdraw" — and fell into step behind him. . . .

* * * * * *

The fight which Delameter's three platoons put up against a battalion-plus coordinated attack completely fooled the Germans. They did not realize the Americans had withdrawn. They believed they had engaged the main American force and pushed it back several hundred yards. Early Christmas morning, the men of the 82d Airborne, digging in on their new line, heard the clamor of a mass attack—on nothing.

It took the Germans more than a day to feel their way across the seven-mile vacuum. For three days, the enemy attacked the new line—and fell back. Then, with the new year, the division took the offensive. The 82d was on its way to Germany. It did not turn back again.

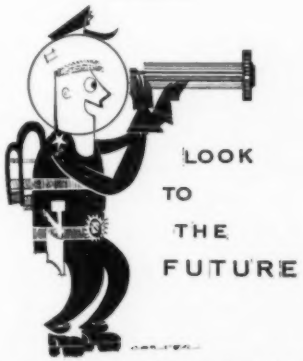
The story seems almost unbelievable. But it is not difficult to isolate causes of the covering force's extraordinary success.

The first is **leadership.** The leaders were determined to accomplish their mission, and they were able to instill their determination in every man who fought with them.

The second is **confidence.** A lesser man than Delameter or Lamm would have wavered in the crises. One case of panic—one man breaking and running—might have collapsed the whole defense. But though these platoons should have been licked a dozen times, they didn't know it.

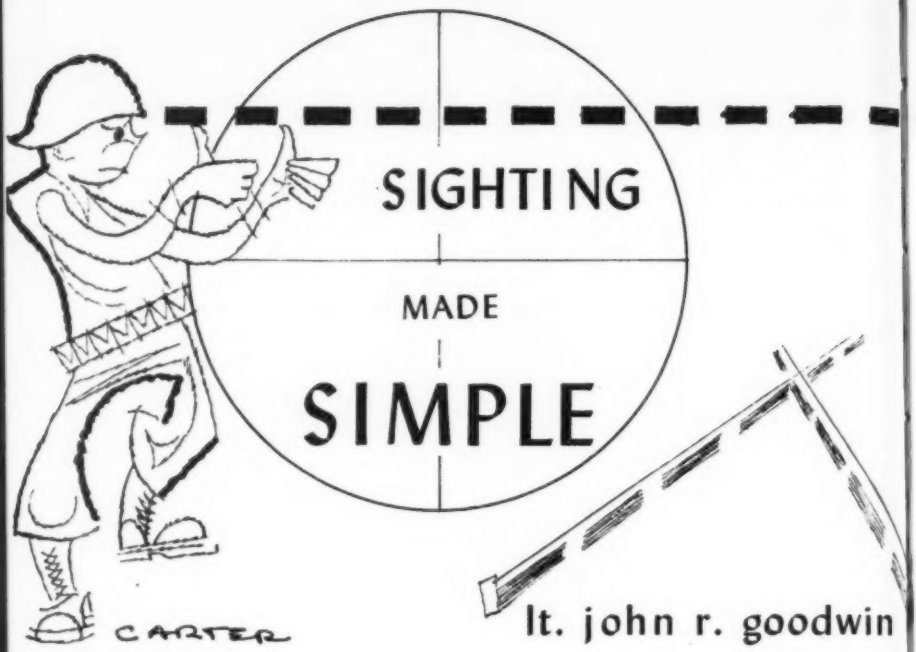
The third is **planning.** The planning was rapid but not hasty. Every man knew what he was expected to do and why he was doing it. With so small a force, a poor choice of positions would have left many holes for infiltration. But the platoons had been skillfully placed to cover the avenues of approach.

The fourth is **training.** This battalion—this regiment—this division had never before in their history made a combat withdrawal. They never made another. But in training, they performed night withdrawals again and again—at Camps Blanding and Mackall, on maneuvers in Carolina and Tennessee, in Ireland, England and France.[3] The investment paid dividends just once—the Christmas Eve of 1944. But for the men of the 82d Airborne Division, it was time well spent. After all, if you get killed once, you're awful dead.



Long range planners naturally want long-term subscriptions to *The Infantry School Quarterly* — the magazine that shows the shape of things to come!

[3]Due to the condition of bright moonlight, it was possible to adopt some techniques that were normally used in a daylight withdrawal, i.e., three platoons commanded by their assigned platoon leaders rather than composite platoons made up of reinforced squads from the front line area and commanded by the company executive officer.



lt. john r. goodwin

AND then you place the cross hair outside the rear stake as far as the distance between the stakes. In other words, you place the rear stake halfway from the front stake to the cross hair. Now do you all understand how to make a compensated sight picture?"

I glance around the class. Everywhere, the same dazed expression. This is like asking if they know how to fill in a morning report.

"Sir, Private Potter. I heard very clearly what you said, but I don't know what you're talking about."

"Thank you, Private Potter," I reply, muttering that he's the first trainee in months to speak out like this. "There seems to be a little doubt remaining in some people's minds . . . ."

The understatement of the morning. But I repeat my explanation slowly. I draw a compensated sight picture on the blackboard. "Does that clear it up for you, Private Potter?"

"Yes, sir." This time he is stretching the truth a little, but it is breaktime, when trainees unanimously agree that Silence is Golden.

Half an hour later—as usual—I find myself checking mortars and repeating over and over, "No, not between the stakes! Remember the rule. Place the cross hair. . . ."

Week by week, this episode became monotonously familiar. Correct sight picture is as important for the 81mm and 4.2" mortars as it is for the M1. Yet it was on this point that my instruction always broke down. Perhaps a training aid. . . .

Plywood and Paint

I found a piece of plywood 24 by 36 inches and painted a landscape on it.

For the sky, I mixed blue and white, leaving white patches for clouds (see Photo A). After this dried, I touched one edge of the clouds with yellow. The hills, of course, were green, shaded with black. The effect of depth was obtained by placing a few strokes of white on the crests of the hills and in the foreground. I used cheap four-hour enamel, and it worked fine.

I constructed a reticle from black paint, plywood and a coat hanger, which formed the cross hairs. The reticle had an aperture 14 inches in diameter and a 16 inch handle on one side.

My stakes were also plywood, one 6 and the other 8 inches long. To add to the impression of depth, I made the long stake slightly wider. Both were painted red and white, with streaks of green "grass" at the bottom. I fixed the larger stake at the center of my landscape and spaced a row of small nails unevenly on either side. The smaller stake was equipped with a screw eye at the top.

With this equipment, it was easy to duplicate a compensated sight picture. I simply hung the smaller stake on a nail and moved the sight reticle to the correct position. My training aid worked! (See Photo B.)

Original Line of Sight

Here's how to use it effectively. Begin the class by explaining that mortars are initially laid on predetermined azimuths. This coordinates directions and fields of fire for the whole platoon. The mortars lay on a line of sight, determined by the nature of the terrain, the location of targets, outstanding landmarks, etc. This original line of sight, marked by two stakes, serves as a base from which the gunner can measure deflections. Point out that if we used a single stake, we would lose our original line of sight with every shift of the mortar. Add a few words about setting stakes to the rear when we are emplaced against a hill.

A mortar should be mounted about 15 feet in front of the class so that the stakes will be visible to all. Choose demonstrators to set out stakes. Stress

Photo A. Mortar sight picture aid.

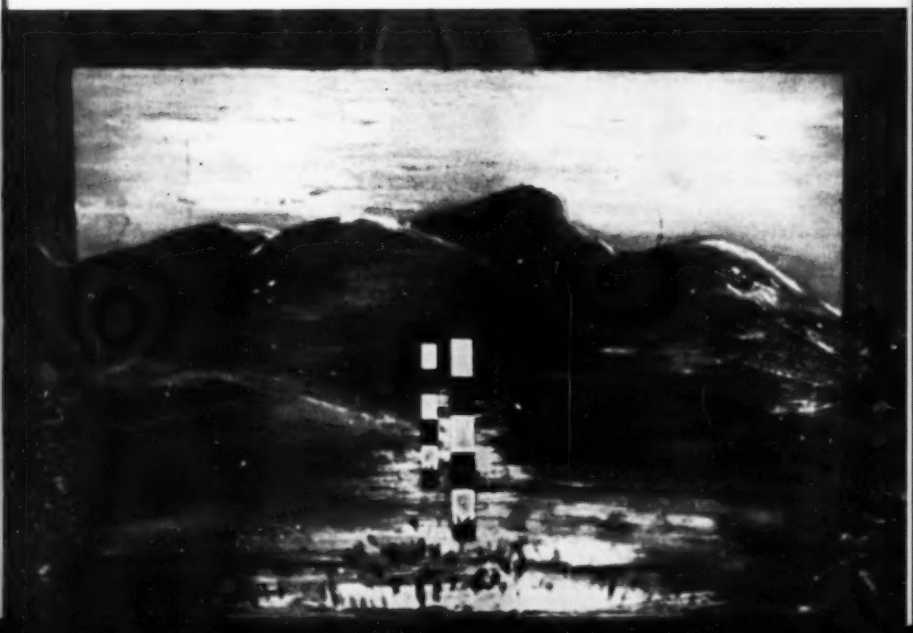


Photo B. Aid with reticle in place.

the fact that the near and far stakes stand respectively 50 and 100 yards from the mortar. If these distances are impossible, the near stake should always stand half way between the mortar and the far stake.

Call attention to the demonstrator's hand and arm signals as he alines the stakes. Remind the assistant gunner to move his hand away from the stake after tilting it. This gives the gunner a chance to observe which way it will spring and to adjust his alinement accordingly. When the alinement is perfect, *only the front stake should be visible.*

Deflection Changes

Three factors cause us to see both stakes instead of only one:

1. Misplacement of the stakes (see Figure 1).
2. Shifting of the base plate (see Figure 2).
3. A large deflection change (see Figure 3).

No adjustment compensates for a misplaced stake. But care and practice should prevent such errors. Lateral shifting of the base plate cannot always be controlled. We can reduce it by preparing a position carefully on solid, level ground. Our primary problem is the large deflection change.

Three demonstrators — a "mortar" and two "stakes" — help dramatize the effects of deflection change on sight picture. Aline the demonstrators at the proper intervals. Then move the "mortar" slightly to one side. With this small deflection change, the mortar will still see only one "stake." But a large deflection change shows both. Move your mortar a foot or two farther and let him tell the class about the resulting displacement.

Angles of Error

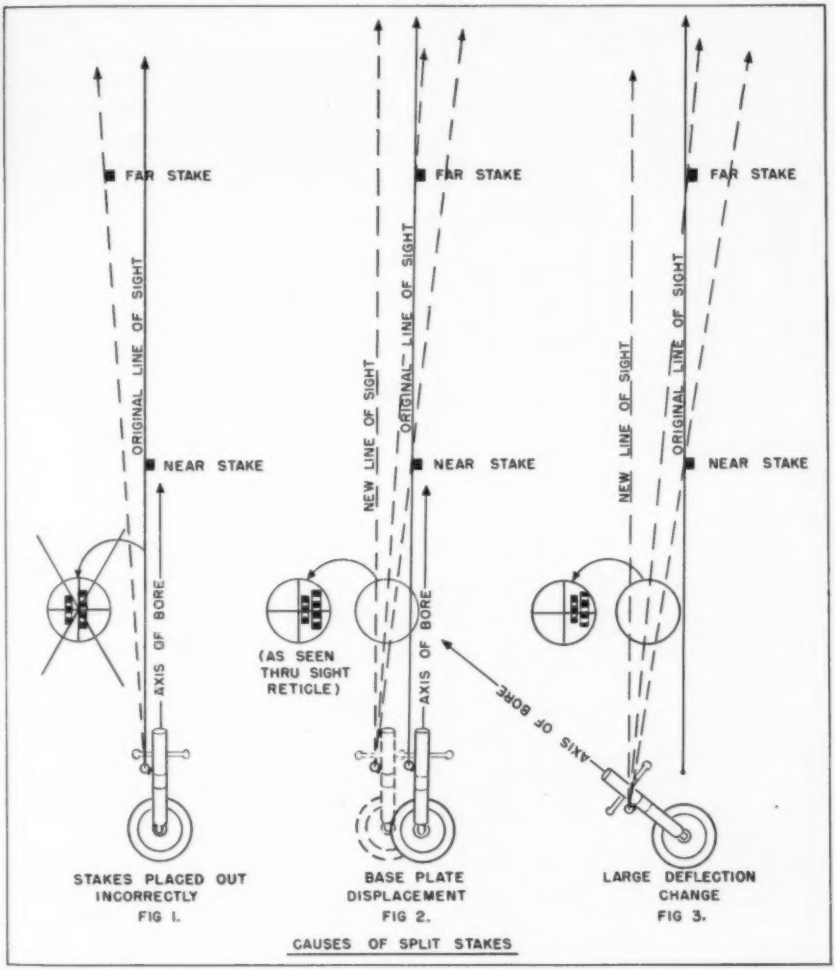
When two stakes are visible, our sight picture is in error. Where should we set the cross hair to compensate? We have four choices:

1. On the left edge of the near stake.
2. Between the stakes.
3. On the left edge of the far stake.
4. Outside the far stake as far as the distance between the stakes.

(The last choice is the correct one.)

Let us assume that we make a deflection change of 201 mils left, shift our mortar and lay on the left edge of the front stake. The rear stake now appears left of the front stake. Our new line of sight must be cutting through the original line from the left, forming an angle (see Figure 4). Let us call this the "angle of error." If we lay the cross hair between the stakes (see Figure 5), the angle decreases. If we lay it on the left edge of the far stake (see Figure 6), the angle decreases, but still exists.

The only way to eliminate the angle of error is to make the new line of sight parallel to the original. We fire most accurately sighting down the original line. A parallel line is the best alternative. To obtain it, we adjust a compensated sight picture, with the rear



stake halfway between the front stake and the cross hair (see Figure 7).

Enter Training Aid

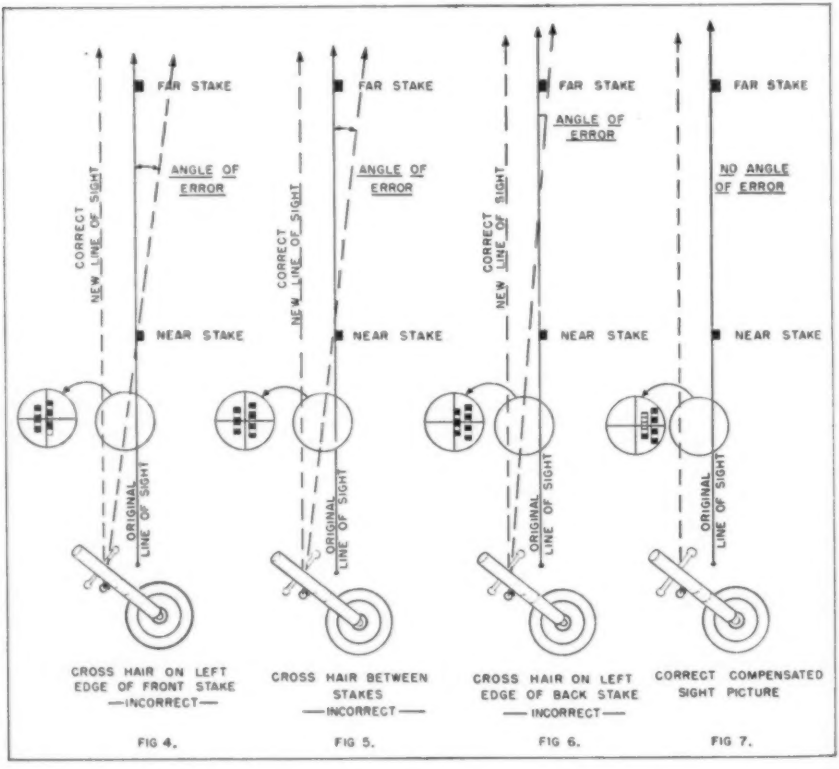
The time has come to unveil our training aid. Give the rule for adjusting a compensated sight picture. Then explain the aid and demonstrate a normal sight picture, using only the fixed stake and laying the cross hair on its left edge.

Next, hang the smaller stake on one of the nails. Shift the reticle to show the correct relation between cross hair and stakes. Repeat this demonstration, varying the position of the rear stake, until the class not only understands the Compensated Sight Picture but sees it. The aid can be used for actual practice. Let volunteers try adjusting the reticle to fit various sight settings. This experience will teach them more than the most comprehensive lecture. The aid also helps show how to move the elbow telescope up or down for a good field of vision.

The aid shows a correct sight picture at all angles. However, we found it best

LT JOHN R. GOODWIN solved a training problem with plywood, paint and assorted scraps. We hope the ingenuity of this officer will help many instructors faced with a similar problem.

A '53 graduate of OCS at Fort Benning, the author is now with the Heavy Mortar Co., 47th Infantry Regiment in Europe.



for you — that compensation itself involves only a few more mils. But this difference is large enough to affect our accuracy. Suppose that when we lay on the front stake our angle of error is only 10 mils. At 5000 yards, it could result in a *50 yard miss!* (See Figure 8.)

Perhaps this presentation seems too detailed for a trainee on his first encounter with the heavy mortar. I would have agreed—a year ago. But with the help of this training aid, I am convinced

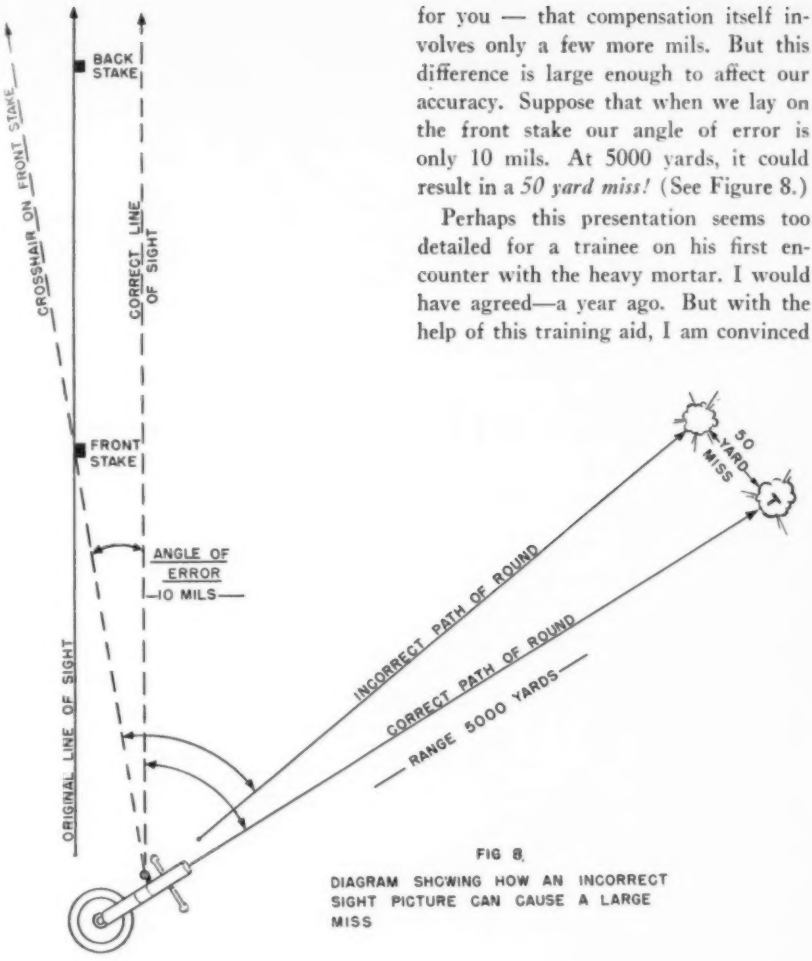


FIG 8.
DIAGRAM SHOWING HOW AN INCORRECT SIGHT PICTURE CAN CAUSE A LARGE MISS

to turn the aid to all sides after making a sight setting.

Impress the class with the fact that the cross hair is adjusted by eye. The horizontal angles can be measured by the sight, but this wastes time which might be critical in combat. The difference between a careful estimate and exact measure is insignificant—a few mils, a few yards.

Point out—before sharpshooters do it that the information can be easily assimilated.

If you are handy with tools and paint, you will find the aid easy, even fun to make. If not, your trainees' improvement on the firing range more than repays your trouble. Your own reward will be the special satisfaction of the instructor who puts across a difficult point—and puts it so clearly that even Private Potter understands.

how would YOU do it?

Major James M. Pratt

Read the situations, study the map and see if you come up with Major Pratt's solutions to these tactical problems.—Editor.

GENERAL SITUATION

Day 1. It is 1700. You are Captain, Company A, 15th Inf. The battalion has the mission of organizing a defense position (see Map, page 77). Since atomic weapons have been used by both the enemy and our own forces, you are cautioned to be prepared for atomic attacks.

Shortly after dark (1930), covering forces are withdrawn. As enemy pressure increases in the sector, the general and combat outposts are withdrawn. Intelligence reports indicate that an enemy attack supported by atomic weapons can be expected.

By 2000 hours your company has almost completed digging in. Your local security reports no enemy activity. You note that a thick ground fog is settling in the low areas around your position.

Day 2. At daybreak (0545), the enemy attacks. This attack is preceded by the use of atomic weapons. One atomic missile[1] is delivered with a *ground zero* in Company B's area (see Map, page 77). Your radio and wire communications are put out of commission. Though fog and dust restrict vision, you estimate your company has a loss of 60% personnel and equipment.

PROBLEM 1

As Commanding Officer, Company A, what actions would you take at this time? (List in order of priority.)

SITUATION 2

Approximately 15 minutes after the atomic explosion in Company B's area, you have re-established contact with the surviving members of your platoons (on position). As a result of their reports, you learn that Company A has suffered a 40% loss of personnel and equipment.

[1]Able Weapon (2KT) air delivered (air burst).

At this time you are still unable to communicate with battalion or any higher headquarters. From past experience you know the enemy usually exploits the effects of his atomic attack by moving without delay into the affected area.

PROBLEM 2

You are now confronted with the task of regrouping the remainder of your unit. Which one of the following do you elect to do?

(a) Leave your present position to join another combat effective unit.

(b) Remain in your present defensive area and redistribute your combat effective troops and weapons and ammunition, occupying previously held positions.

(c) Organize a company perimeter on the best terrain within your assigned area.

(d) Keep your troops in their present positions because of a possible second atomic explosion in the immediate area.

SITUATION 3

The enemy follows up the atomic attack and moves quickly into Company B's area, and is driving for objectives deep within the battle position. This enemy force (highly mobile) by-passes your company. You now assume that Company A is cut off from adjacent friendly units and reserves to your rear.

PROBLEM 3

As Commanding Officer, Company A, which one of the following do you do?

(a) Remain in your present defensive position.

(b) Leave your position and fight your way back to join the rest of the 15th Infantry.

One atomic missile is delivered by the enemy with a ground zero in Company B's area. Note its effect on Company A's positions.

SOLUTIONS

Problem 1

In order of priority, you would:

(a) Establish contact with each platoon and determine the combat effectiveness of your company.

(b) Make every effort to contact the next higher surviving headquarters (messengers and prearranged visual signals[2] may be used).

(c) Redistribute troops, weapons and ammunition within the defensive area, and prepare for the probable enemy exploitation of his atomic attack.

(d) Insure the administration of first aid to all wounded personnel. (There will not be enough Medical Corps men available, so every soldier must know how to treat himself — as well as other casualties.)

Problem 2

(a) No. Remember you have been given a defensive mission. You would not leave the critical terrain your company now occupies. You have a 60% combat-effective unit and can be expected to continue your mission.

(b) Yes. You may decide to replace the right front-line platoon (most severely hit because it was closest to the explosion) with the reserve platoon, or reorganize the surviving personnel into an effective fighting force within present platoon positions. You must reorganize quickly in order to delay or disrupt the enemy when he follows his atomic attack with an exploitation attempt.

(c) No. Your company, although badly hit, is still an effective fighting force. Had the casualty rate been higher, you would have rallied all survivors and moved to a previously prepared position (your left platoon area) on the best defensive terrain in the area.

(d) No. Without the redistribution of troops, weapons and ammunition, the company could not effectively continue its defensive mission. The possibility of a second atomic explosion in the immediate area is remote.

MAJOR JAMES M. PRATT based "How Would You Do It?" on some of the problems an Infantry commander would have to face in the event of an atomic attack near his position. The problems are at company level and should prove to be an extremely valuable reference for small unit commanders.

Major Pratt is an old hand at The Infantry School, having served in the Weapons Department, Staff Department and, currently, the Tactical Department. He recently graduated from the Associate Advanced Course, TIS.

Two Bullets, One General

At Stillwater, New York, one of Washington's best officers, General Daniel Morgan, lay in ambush watching the right wing of the British forces as they maneuvered just beyond musket range. Noticing the British commander with his staff hovering in the background, Gen. Morgan ordered up a certain Tim Murphy, one of his best shots. Murphy, using a rifle with one barrel superimposed upon another, fired two shots in close succession at 300 yards range. The English officer toppled from his horse, dead. Taking advantage of the disorder and confusion following this blow, Gen. Morgan attacked and drove the demoralized British back to Saratoga where, a few days later, they were destroyed in the most decisive battle of the Revolution.—Cpl Frederic R. G. Sanborn.

[2]Pyrotechnic, panels, etc.

THE T 48 RIFLE

major robert h. clagett, jr.

DURING the past months, a number of U. S. Infantrymen became familiar with something new in the way of a military rifle. This new rifle, the T48 (see photo, page 81), was formerly known in this country as the FN[1] rifle. Originally designed as a 7mm or caliber .280 weapon, it now fires the cartridge,

Facts about the new rifle being tested by the army.

[1]Fabrique Nationale.

NATO, 7.62mm[2] — recently adopted by the U. S. as standard for small arms development. This is a caliber .30 round with approximately the same effectiveness as the M2 cartridge. The T48 rifle is capable of automatic or semiautomatic fire and fires a 20 round magazine.

Developed in Belgium

The history of the T48 should be of interest to U. S. Infantrymen who might someday use this weapon and will certainly see it in use in the armies of some of our allies. The rifle action was designed by M. Dieudonné Saive and associates of Fabrique Nationale d'Armes de Guerre of Belgium. M. Saive was at one time intimately associated with the famous U. S. gun designer, John Browning. M. Saive took his cue from Browning in many matters. You will find, for example, that the extractor on the new rifle is almost identical to the extractor on the Browning Automatic Rifle.

M. Saive started the design of the new rifle some years ago. The first version of the rifle fired the same ammunition as the M1. The clamor for newer, lighter Infantry equipment led FN to develop a lightweight version of the new weapon. (This necessitated a lighter cartridge and resulted in the development of a 7mm round.) As U. S. interest in the weapon increased, it was rechambered to fire the "T65 round." The new U. S. round, as its present name implies, was later agreed to by the NATO nations as the basis for all new small arms development.

The U. S. desired a heavy barreled variant of the new rifle which would be mechanically identical to the regular T48. This heavy barreled rifle is regarded as a potential replacement for the BAR. (The value of the mechanical identity of the rifle and autorifle should be apparent to any Infantryman.)

Unique Form

Note the unique form of the new rifle (see photo, page 81). There is a pistol grip which helps to shorten the overall length. There is a straight line that runs down the center of the barrel and comes out in the heel of the butt. This feature was incorporated to increase stability in automatic fire from the shoulder, reducing the tendency of the rifle to climb.

"...the T48 represents a somewhat radical departure from

Straight Line Stock

The straight-line stock effect is achieved by having the gas cylinder on top of the barrel. This amplifies the chronic problem of gun designers working on any gas operated weapon: i.e., how to apply the energy derived from the gas in the barrel to the bolt, in such a way as not to interfere with feed and ejection. Garand solved the problem by the use of a piston and operating rod shaped like this:

Browning solved the same problem in the BAR by an operating rod and piston arrangement like this:

FN separated the piston from the bolt by a bolt carrier or slide. When the piston has transferred most of its energy to the bolt carrier in the form of momentum, the piston returns to battery by the action of its own spring while the bolt carrier continues to the rear, compressing the operating spring in the butt. The

[2]Known to U. S. Infantrymen as the T65 (see "The Queen and the Cartridge," page 48).

feedway is left open from all sides. The receiver is free for feeding from the magazine, loading from the clip or ejection.

The key to the action is in this separation of the bolt and bolt carrier or slide. The bolt literally floats in the carrier. The carrier serves to cam the rear of the bolt into its locking recess in the floor of the receiver during the forward motion of the bolt and cam it out and start it to the rear in the rearward part of the firing cycle (see Figure A, page 82). The operating handle on the left side is non-reciprocating as in the BAR.

conventional military rifles."

Capable of Automatic Fire

Automatic fire is achieved by means of the automatic sear which acts as an additional safety in semiautomatic fire. When the hammer is forced into the cocked position by the action of the bolt carrier and bolt in their rearward motion, the automatic sear engages a notch in the base of the hammer. This sear holds the hammer in the retracted or cocked position until the bolt carrier trips it in the last fraction of an inch of its forward motion after the bolt is fully locked. If the rifle is set for automatic fire — the hammer then falls and fires the next round. Should the rifle be set for semiautomatic fire — the hammer starts to fall, but is caught after a very slight motion by the regular sear. This action prevents the rifle from firing until the bolt is fully locked . . . thus providing the additional safety mentioned above.

Sear Action

The regular sear is similar in shape to the sear of the U. S. carbine (see Figure B, page 83). The trigger pin goes through it in an oval hole in the sear. There is a small spring between the trigger and

The weapon shown is a developmental model of the T-48 rifle. It may undergo a number of changes before tests are complete.

sear that presses continually forward on the sear so that the trigger pin rests in the rearmost part of the oval hole. In this position, the sear can be depressed into a recess in the trigger. When the hammer is engaged by the sear — the hammer spring overcomes the action of the sear spring — forcing the sear to the rear in its oval hole. When the trigger is pressed, it makes a solid contact with the sear, forcing the nose of the sear down and out of the sear notch in the hammer. As the hammer falls, the sear spring repositions the sear so that the sear is over the recess in the trigger again, permitting the sear to engage the sear notch in the hammer regardless of the position of the trigger.

Dual Purpose Safety Lever

The manual safety lever also serves to select automatic or semiautomatic fire. It consists of an external lever and a double notched cylinder within the trigger group. The safety lever has three positions.

In the first or "S" position, the interior cylinder is positioned with neither notch opposite the trigger. Pressure on the trigger, when the safety is thus set, simply results in motion too slight to permit the sear to become disengaged from the hammer.

In the "R" position for semiautomatic fire — the smaller of the two notches in the cylinder is opposite the trigger. When the change lever is in this position, pressure on the trigger permits the sear to become disengaged from the hammer and the piece to be fired. The sear spring returns the sear to the position required to reengage the hammer.

With the change lever in the third position (marked "A" for automatic), the larger of the two notches on the

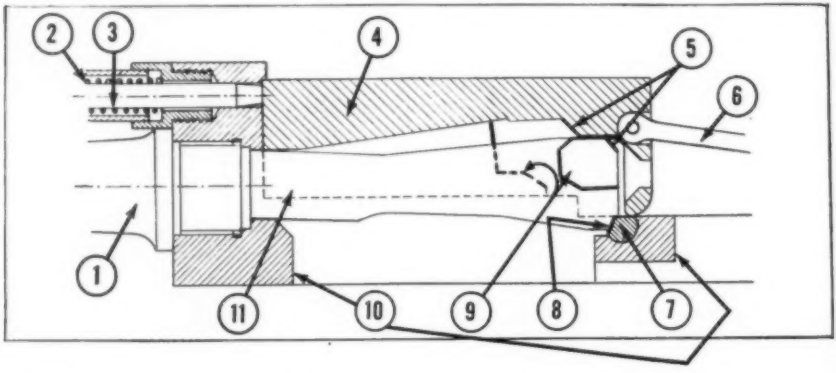


Figure A. Key: (1) barrel; (2) gas cylinder; (3) piston rod and spring; (4) bolt carrier; (5) locking cams (left on carrier, right on bolt); (6) operating spring plunger; (7) locking recess in receiver; (8) locking surface on bolt; (9) unlocking cams (left on carrier, right on bolt); (10) receiver, and (11) bolt.

By action of piston (3) to the rear, the bolt carrier (4) moves to the rear closing the gap between the unlocking cams (9). The carrier continuing rear lifts the locking surface (8) from the locking recess (7) freeing the bolt (11) and starting it to the rear. The plunger (6) on the carrier (4) compresses the operating spring in the butt. After complete rearward motion the operating spring by means of the plunger (6) starts the bolt (11) and bolt carrier (4) forward stripping a round from the magazine. When the bolt (11) is stopped by the barrel (1) the locking cams (5) force the locking surface (8) into the locking recess (7) completing the cycle.

of this new rifle is its simplicity."

cylinder is opposite the trigger. Pressure on the trigger then raises the trigger, moving the sear so far that the sear spring cannot place the sear in position to reengage the hammer. Since the sear does not catch the hammer when released by the automatic sear, the hammer continues its fall until it strikes the firing pin, firing a second round. This continues until the trigger is released, when the sear again catches the hammer and stops the burst. When fired on automatic, the T48 has a cyclic rate of about 650 rounds per minute.

Extremely Simple

Perhaps the most interesting feature of this new rifle is its simplicity. Field stripping is accomplished in much the same manner as loading a single or double barreled shotgun. A small lever (just to the rear of the safety and below the rear sight) releases a catch, and the rifle snaps open just as a shotgun does. The bolt and bolt carrier are withdrawn to the rear like an empty shell case from a shotgun. The receiver cover (which is a piece of pressed metal) is slid to the rear and off. The entire receiver is now open for cleaning and the barrel can be cleaned from breech or muzzle.

The gas plug is removed with a cartridge by a one-quarter turn in either direction. The piston normally jumps out under the pressure of its spring.

The operating spring[3] has not been mentioned in this disassembly. It is housed in the butt of the rifle and only removed in detailed cleaning. Ordinary

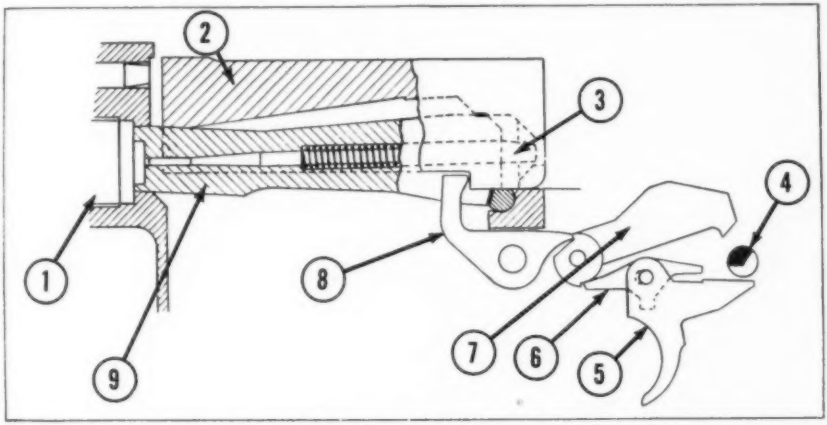


Figure B. Key: (1) breech; (2) bolt carrier; (3) firing pin; (4) safety-change lever; (5) trigger; (6) sear; (7) hammer; (8) auto sear, and (9) bolt.
Forward motion of the bolt carrier (2) locks the bolt (9) and trips the auto sear (8) releasing the hammer (7) to be caught by the sear (6). The sear is forced to the rear by the hammer, becoming engaged over the step on the top rear of the trigger (5). Pressure on the trigger then disengages the sear from the hammer allowing it to fall striking the firing pin (3). Action of the bolt carrier to rear depresses the hammer and re-engages it with the auto sear (8). The sear (6) moves forward slightly, immediately the hammer is released becoming disengaged from the trigger step and is free to catch the hammer whether or not the trigger is pressed. The safety-change lever (4) determines by its position how much the trigger may be depressed; none for safe, little for semi-automatic and much for automatic fire.

[3]The operating spring is not to be repeatedly removed from the rifle and subjected to grit and dirt or salty, sweaty hands. This "hands off" policy will also protect it from dropping underfoot where it might be stepped on or crushed.

care requires only that this spring be oiled, which is a simple operation.

Clip Loading

By modifying the receiver cover in any of several ways, it can be made to accommodate a clip guide.

Adaptable for Sniping

The rifle bore is precise enough to permit its use as a sniper's rifle, as we now use the M1. The receiver cover is used to mount a telescope. With this mounting technique, any T48 rifle can be converted to a sniper's rifle simply by "breaking" it and exchanging receiver covers.

New Type Sights

The regular sights on the T48 are a compromise between European and U. S. thinking on military rifle sights. The aperture rear sight is graduated in hundreds of yards (or meters as required) from 100 to 600. Though appearing larger, this aperture is the same size as that of the M1. The illusion is created by the shorter distance from the rear sight to the eye. The rear sight is capable of lateral adjustment for zeroing. But it is not simple enough to permit adjustment for windage (if such adjustment means compensating for the vagaries of the wind and its effect on the flight of the bullet). Apparently, the new lateral adjustment is a recognition of the fact that few soldiers are skilled enough to make these adjustments properly.[4] Practically none are capable of doing so in battle. Leaving off windage adjustment might actually yield better shooting in a battle because there is less chance of the sights being inadvertently mis-set.

Zeroing for Range

The only vertical adjustment in the rear sight is the range adjustment in hundreds of yards. With high powered rifle ammunition and the difficulties of estimating range in battle (prior to setting sights), 100 yard increments of range adjustment may well be sufficient.

The front sight is capable of vertical adjustment for zeroing. This front sight is a conical post sight and is threaded into the front sight block, which is part of the gas system. Turning this sight post in its

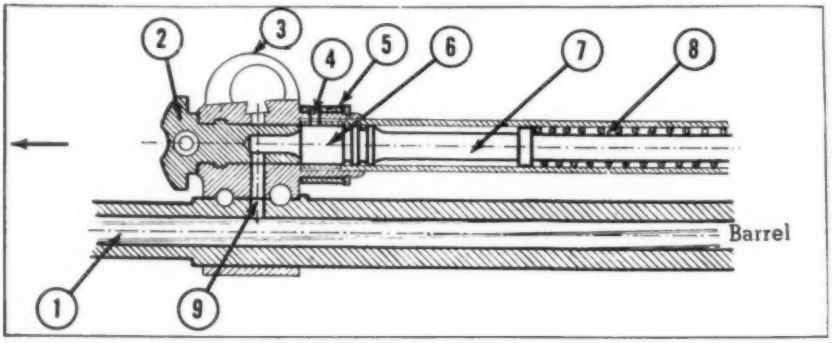


Figure C. Key: (1) barrel; (2) gas plug; (3) front sight guard; (4) exhaust gas port; (5) gas regulator sleeve; (6) piston head; (7) piston rod; (8) piston return spring and (9) gas port. When the bullet passes the gas port (9) in the barrel (1), gas at high pressure passes through the port into the gas plug (2) and impinges on the face of the piston head (6), driving it to the rear. Gas excess to that needed for operating the rifle passes off through the exhaust gas port (4) without acting on the piston. The amount of gas thus passed off is controlled by the gas regulator sleeve (5).

[4]The Infantry School does not concur with the statement ". . . that few soldiers are skilled enough to make these adjustments properly." Experience in training has indicated that soldiers can and do learn this technique. Editor.

[5]A cone with the vertex cut off parallel to its base.

threaded seat raises and lowers it for zeroing purposes. Since it is in the shape of a *truncated cone*,[5] it presents the same profile to the shooter no matter how it is turned. The only difficulty that MI shooters will experience in zeroing this rifle for elevation is the fact that the adjustment is in the front sight, hence raising the sight lowers the shot and vice versa.

Gas Is Adjustable

Another unique feature of the T48 is the power adjustment (see Figure C, page 84). We are all familiar with the gas adjustment of the BAR, which has three ports for the passage of gas from the barrel to the cylinder. When the BAR is dirty, fouled from extensive firing or extremely cold, the operation of the action requires more power than usual. This need for more power under adverse conditions is common to all automatic and semiautomatic weapons.

The adverse condition ceiling can be raised, but not eliminated, by designing in a means of increasing power. In the BAR, the input gas to the cylinder is increased. In the T48, the port from the barrel to the cylinder is made large enough to provide more gas than the rifle can reasonably be expected to require. On the top of the cylinder opposite the input port is an oval waste gas or exhaust port. Turning the threaded collar on the gas cylinder causes it to advance or retract over the exhaust port. As it retracts, it permits more and more gas to escape from the cylinder without doing any work. By proper adjustment of the collar, the amount of gas retained and permitted to work on the action can be set to the necessary level for a clean, properly lubricated rifle. Should the rifle begin to give indications of being underpowered, such as short recoil or short ejection, the gas adjustment collar can be advanced by turning it with a cartridge until the indication of underpower disappears completely.

As with any accessory added to a piece of military equipment, there is a price to be paid for the advantage gained. In the case of this gas adjustment, the price is the risk of having a soldier habitually fire his rifle overpowered because of improper adjustment. This is something that can be overcome by thorough training.

Carrying Handle

A feature that is not unique, but is certainly unusual, is the carrying handle provided on the T48. The balance of the rifle is at the point where the long 20 round magazine protrudes from the bottom of the rifle. This prevents grasping the rifle at the balance. The folding carrying handle provides a convenient means of grasping the rifle. The handle is curved so that it does not obscure the line of sight if it becomes necessary to fire the rifle without folding the handle down.

Unconventional

In substance, the T48 represents a somewhat radical departure from conventional military rifles. It has a new (relatively speaking) action, and a rather unique form factor including: a pistol grip, an extremely simple disassembly and sights that are a departure from U. S. tradition.

When?

A logical question at this point might be: what about all this—are we going to adopt the T48 or not? At this time, it must suffice to say that the U. S. is con-

MAJOR ROBERT H. CLAGETT JR. helps the Quarterly score another first. His article is the first thorough description of the new T-48 Rifle to be published in any military magazine.

The author received his commission and a B.S. degree from the USMA in 1942. Returning to school in 1946, he earned a master's degree in electrical engineering at the University of Pennsylvania.

He is now on the staff of CONARC, Board #3 at Fort Benning.

sidering the T48. It should be added, though, that the T48 is not the only rifle under consideration.

If a new rifle is adopted, we should bear in mind that the length of time from adoption to distribution may be extensive. There are factors of production and engineering to be resolved. . . . When this is accomplished, complex assembly lines must be established and set in motion to achieve production in the required quantity.

The Ordnance Corps, in association with U. S. industry, can solve these problems—but it will take time.

Why this article, then? Because many U. S. Infantrymen have seen and become familiar with the T48 rifle recently, and there is bound to be scuttlebutt circulating about it; and secondly, because it will serve to remind all of us that the U. S. rifleman has not been forgotten in this age of thermonuclear warfare.

Answers . . . to the Quiz

Possible score 100 points, Expert 90-100, Sharpshooter 70-80, Marksman 50-60, Recruit 30-40, and Bolo 0-20. For complete detailed discussion of the answers check the references listed below.

1. The S2's primary duties are to:
   a. Produce combat intelligence.
   b. Recommend counterintelligence measures to his commander. (Par. 6, FM 30-5.)
2. c. The 300 yard zero of the M1 rifle is also the setting of the battle sight. (Par. 173, FM 23-5.)
3. Regimental Hq & Hq Co — T/O&E 7-12, 15 May 52 w/Change 7, 14 May 54:
   1 Sgt Senior Radio Mechanic
   3 Cpl Radio Mechanic
   Bn Hq & Hq Co—T/O&E 7-16, 15 May 52 w/Change 5, 11 Mar 54:
   1 Sgt Senior Radio Mechanic
   2 Cpl Radio Mechanic
   Regt Tank Co — T/O&E 17-37, 15 May 52 w/Change 3, 14 May 54:
   1 Sgt Radio Mechanic
   1 Cpl Radio Mechanic
4. b. Direct fire support weapons deliver the most effective fires in support of advancing troops by neutralizing the fire from pillboxes and definitely located weapon positions. These weapons should be positioned to permit frontal fire into the embrasures because the embrasures are constructed with stepped sides to prevent ricocheting into them. Flanking fire would have very little penetrating effect on the embrasures. Indirect fire support weapons and tactical air provide the saturation fire to neutralize the enemy in field-type fortifications. (FM 31-50, Pars. 50b, 51c and 53.)
5. Tactical wire, protective wire and supplementary wire. (FM 5-15.)
6. With a panel T, panel code letter, smoke and radar beacon (if available). (FM 57-30, January 1952, Appendix X, Section VI, Appendix B, Par. 3b(1).)
7. c. (Par. 53a, FM 23-85.)
8. a and b. M-10 plotting boards are no longer authorized for the 60mm mortar squads. One (1) plotting board is authorized for the mortar section headquarters. (FM 5-25, Section III, page 87.)
9. The Basic Planning Guide is a status report prepared by ground units to determine the aircraft required for an Airborne operation. This form shows the exact status of a unit in personnel, vehicles, equipment and supply. (FM 57-20, January, 1952, Par. 20a.)
10. a. (Par. 98c, TM 9-2700).

DISPENSER REFILL KIT

THE use of field communication wire issued in the MX-306 Wire Dispenser proved a mixed blessing to us in Korea. The more wire we laid from MX-306's, the more we found ourselves with time and personnel available, recoverable wire in plentiful supply . . . and no drums or reels to pick up the wire (though there was an abundance of empty dispensers).

We developed a gadget which we used, successfully, to recover re-usable wire which would otherwise have been left for someone else to pick up. This dispenser refiller can be readily improvised from scrap materials using tools available in lower echelon units. It doesn't require the services of a skilled carpenter nor a supply of first grade material, and the dimensions are not critical. . . .

The side discs (see Figure 1, parts A & B) are 12 inches in diameter. Three-eighth inch thick plywood is a suitable material. The hole in each disc is hexagonal, inscribed in a circle 4 inches in diameter and centered on the disc. A small notch should be cut in one side of the hole to accommodate a piece of wire which will extend through the disc when the device is in use.

The 6 core pieces (see Figure 1, parts C, D, E, F, G & H) should be of ½ inch hardwood, approximately 7 inches by 2 inches. These are beveled on the

CWO Benjamin L. Leslie

The author saw combat as a regimental assistant communications officer in Europe (1943-46) and in Korea (1950-53) and is now a student at Fort Monmouth, New Jersey.

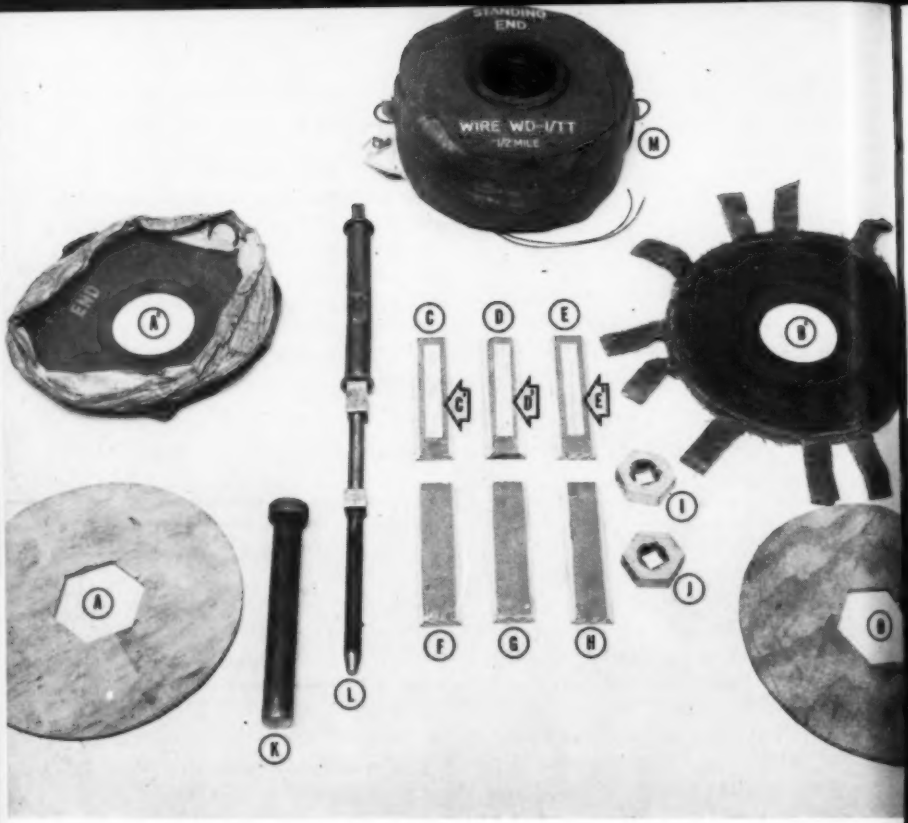


Figure 1. A, B: side discs; A', B': side covers; C, D, E, F, G, H: core pieces; C', D', E': core pieces with wooden strips; I, J: axle bearings; K, L: R-27 or R-31; M: assembled Refill Dispenser.

long edges, so that the 2 inch dimension can be fitted snugly into the hole in the side disc. Small strips of wood, 5 inches by 1¼ inches, ¼ inch thick (see Figure 1, parts C', D' & E') are fastened to the inner surface of 3 of the core pieces centered on the surface. This leaves 1 inch of the core piece extending beyond the small strip at each end. These strips serve as spacers for the axle bearings.

The axle bearings (see Figure 1, parts I & J) should be of at least ¾ inch stock. These must force the core pieces tightly against the side discs and should, therefore, be carefully sanded to obtain a good fit. The axle bearings also transmit the rotary motion of the axle to the other parts of the refiller. Since ½ inch stock was used for the core pieces, the axle bearings should be cut to the dimensions of a hexagon inscribed in a 3 inch circle. This allows sufficient waste for sanding to the required tight fit. The holes in the axle bearings are 1 inch square and centered to fit the square section of an RL-27 or RL-31 (see Figure 1, parts K & L).

The following instructions will clarify the use of the refiller:

(1) Carefully untape the empty MX-306 dispenser case and save the tape for later use.

(2) Assemble the axle bearings on the square shank or shoulders of an RL-27 or RL-31 (see Figure 2).

(3) Fit the 6 core pieces around the axle bearings, alternating the plain pieces with those having the small strips attached (see Figure 3).

(4) Place the two halves of the dispenser case over the core, with the outside surfaces of the halves toward the ends of the axle.

(5) Force the side discs onto the core, adjusting them so they will be about 6 inches apart.

(6) Pull the canvas halves of the dispenser down over the outside of the side discs (see Figure 4).

(7) Before starting to wind wire onto the refiller, take a piece of wire about 2 feet long and insert between the core and the rubber ring in the "standing end" of the canvas dispenser case. Bring

Figure 2

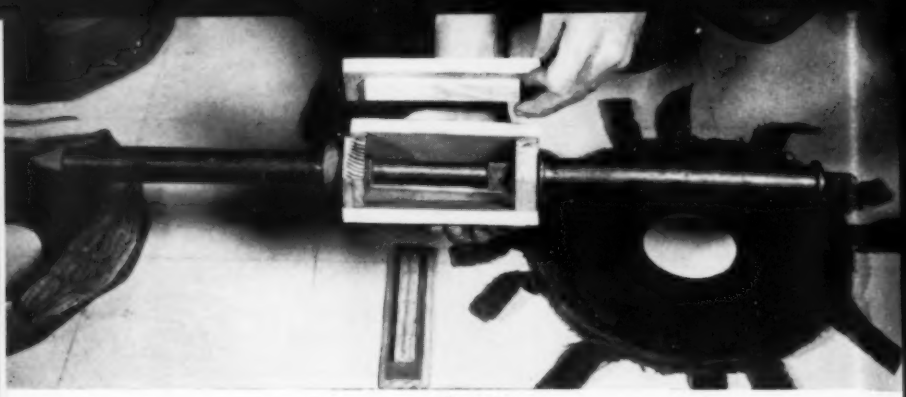


Figure 3

this wire over the edge of the case and down on the outside to make a complete loop. Twist or tape the ends together on the outside of the assembly. This wire will be used later to provide a "standing end" connection to the refilled dispenser.

(8) Attach the crank handle to the RL-27 or RL-31, and the unit is ready for use (see Figure 5).

(9) Push the end of the wire to be wound between the core and the rubber grommet in the "pay out" half of the dispenser case (from the inside to the outside), and start winding the wire onto the core.[1] Continue winding until the unit is filled even with the rim of the side discs.

(10) At this time, the wire is cut. The end is then spliced to one end of the 2 foot piece of wire which was previously placed through the "standing end" half of the dispenser case, leaving the other end extending through the rubber grommet. Or, for a neater job which would eliminate the splice, the 2 foot piece may be used to "fish" the wire end through the grommet to form the standing end.

(11) Next, the 2 halves of the dispenser case are pulled over the rewound wire and secured with tape which was saved when the halves were separated.

(12) Remove the entire unit from the axle. Pull the side discs from the core and remove the axle bearings. Slide one of the core pieces out, and the remainder of the core will collapse, permitting all of the pieces to be withdrawn — leaving the usable refilled dispenser.

Naturally, the refilled dispenser will not have quite as much wire in it as the original package. And, since this method of rewinding does not put a "reverse twist" in the turns (as is done in the original), the wire has a slight tendency

Figure 4

Figure 5

to recoil on itself and will occasionally "hang" in the dispenser. Because of this, the refilled dispensers should not be relied on for high speed wire laying, e.g., from a rapidly moving vehicle. But, for most purposes, the refilled dispensers will prove highly satisfactory. Whether you're a commander primarily interested in supply economy or a communication man interested in having as much wire available when and where you want it, you'll find this device supplies ample reward for the little time and effort required to construct it.

[1]Special care should be taken in winding the first 2 or 3 layers to keep the wire tight and as level as possible.

Figure 6

Keep 'em

Col Robert E. Holman

Rolling!

THE commander who receives an unsatisfactory technical inspection report on his vehicles is usually shocked —and always has genuine cause for concern. He is sure to be equally perturbed when a barrier or roadside inspection shows that one or more of his vehicles is unsatisfactory. The commander knows such findings indicate a sub-standard vehicle maintenance program in his unit. . . . He has reason to worry.

He may find himself yielding to the almost irresistible impulse to "chew out" his motor officer. This works sometimes, but seldom reaches the real cause of the difficulty.

There are, however, two major solutions to the problem of correct vehicle maintenance: (1) show commanders at

The radiator must be full of clean coolant, and the engine free of dirt-catching grease.

all levels how to recognize proper maintenance procedures, and (2) indicate the necessity for **real** command supervision and support.

A commander who has never learned good wheeled vehicle maintenance procedures usually doesn't recognize them when he sees them. Too often, unit maintenance schools are sub-standard and, consequently, do little more than perpetuate sub-standard performance.

Other commanders, more familiar with the subject, often find themselves handicapped because they are unable to obtain up-to-date information, lack suitable training aids, or must rely on instructors who are inexperienced along automotive lines.

A Solution — We believe all commanders will be interested to know that The Infantry School's Automotive Department has produced a ready-to-use 16-hour "Commander's Automotive Preventive Maintenance Training Program."

This program, in book form, is complete with a lesson narration for each subject, training aids data and other material pertinent to the course. All a commander has to do is locate a suitable

Check for leaks, loose fittings and lubrication indicators under the vehicle.

Correct tire pressure is important to normal tire wear.

instruction area and give his instructors the prepared narratives.

How the Program Helps—

The skeptic may ask, "How can this training program help my unit?"

The answer:

1. It provides a course of instruction for Infantry regimental and battalion commanders (and their staffs) that enables them to better plan, direct and conduct command inspections of their vehicles.

2. It enables these officers to evaluate better the results of such inspections.

3. It enables them to give more effective command support to their unit vehicle preventive maintenance program.

4. It also provides a source of study material for both officers and non-coms—offering a means of self-improvement in the field of vehicle operation and maintenance.

Let us assume that you decide it's not how well simonized your vehicles are that counts, but how they **perform.** (Cleanliness is an indication that your vehicles are not forgotten, but provides no clue to the condition of the less con-

The loss of a connector may disable the tank.

spicuous areas of a vehicle.) You conclude that you and/or your subordinate commanders need a vehicle maintenance course. After an evaluation of your unit's mission and the time and facilities available—you decide to use the following 16-hour course (shown here in outline form):

COMMANDER'S AUTOMOTIVE PREVENTIVE MAINTENANCE TRAINING PROGRAM
SUGGESTED COURSE OF INSTRUCTION

(16 Hours)

Subject and References	Hours and Type of Instruction	Scope of Instruction
	Part I—Background Development	
Orientation	1—C	CONFERENCE covering: Purpose of the course. Specific objectives to be accomplished within the unit. Pertinent unit standard operating procedures. Preventive maintenance as related to supply economy. Commander's responsibilities. Organization for maintenance in garrison and in the field. Organizational maintenance procedures.
Infantry Wheeled Vehicle Familiarization	1—C, D, FB	CONFERENCE, DEMONSTRATION, and FILM BULLETIN covering: Familiarization with vehicles of the unit. Nomenclature and identification. Vehicle capabilities and limitations. FB 288, "Modern Ordnance Materiel, Wheeled Vehicles" (12 Minutes).

Planned maintenance avoids confusion.

Subject and References	Hours and Type of Instruction	Scope of Instruction
Preventive Maintenance Indicators: Wheeled Vehicle Engine Systems	1—C, D, TF	CONFERENCE, DEMONSTRATION, and TRAINING FILM covering: Preventive Maintenance Indicators in relation to the six (6) major systems of the internal combustion engine. Nomenclature, functioning and organization maintenance of these systems. TF 10-166, "Principles of Operation" (12 Minutes).
Preventive Maintenance Indicators: Wheeled Vehicle Power Train and Running Gear	1—C, D	CONFERENCE and DEMONSTRATION covering: Preventive Maintenance Indicators in relation to the major elements of the power train and running gear. Nomenclature, functioning and organization maintenance of these elements.
Preventive Maintenance Indicators: Infantry Tracked Vehicles	1—C, D	CONFERENCE and DEMONSTRATION covering: Preventive Maintenance Indicators in relation to the tracked vehicles of the Infantry regiment. Nomenclature and identification. Vehicle capabilities and limitations.
Part II—Motor Pool Administration		
Lubrication	1—C, D, TF	CONFERENCE, DEMONSTRATION and TRAINING FILM covering: Purpose of lubrication. Types and identification of lubricants. The lubrication order and its use. Lubrication equipment. Importance of lubrication in preventive maintenance. TF 9-1417, "Lubrication of Military Vehicles," Part 2, "Methods of Lubrication" (25 minutes).
Operations, Forms and Records	1—C	CONFERENCE covering: Command supervision and control in motor vehicle operations. Motor pool layout. The purpose and use of DD Form 110, WD AGO Form 9-75, Standard Form 91 and DD Form 518.
Maintenance, Forms and Records	1—C	CONFERENCE covering: The procedure and technique of scheduling maintenance for tactical vehicles. Use of maintenance Forms 460, 461, 811, etc.

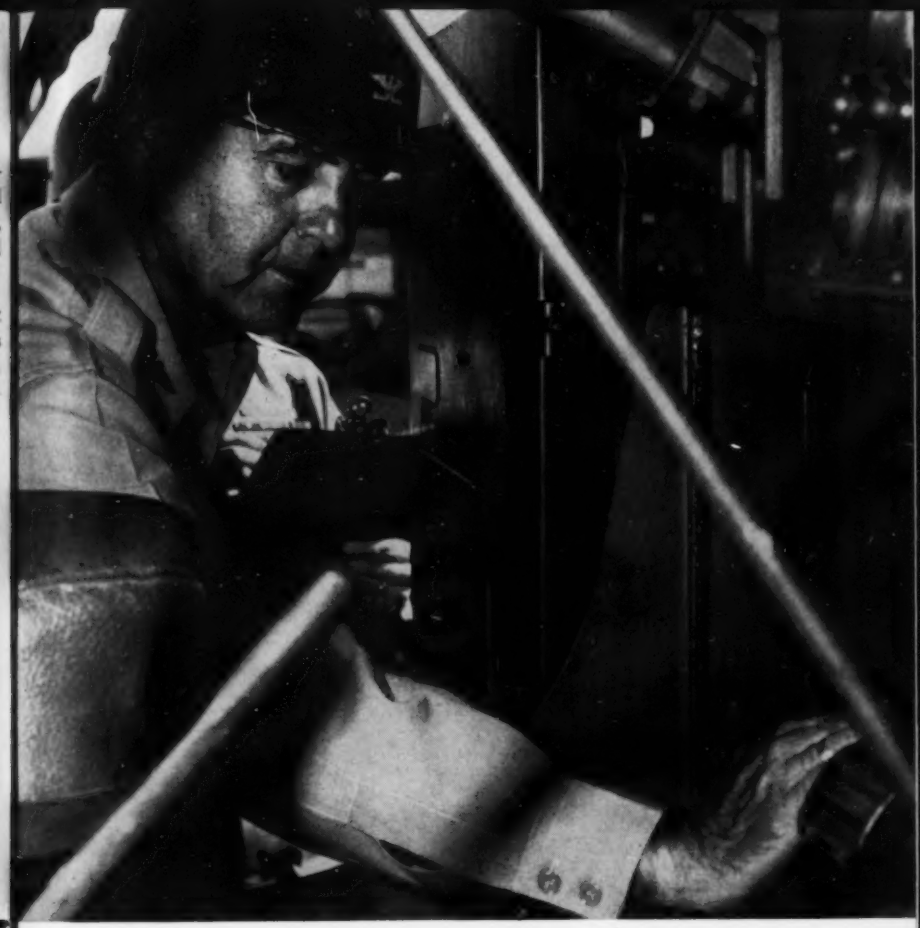
Part II—Motor Pool Administration (Cont.)

Subject and References	Hours and Type of Instruction	Scope of Instruction
Driver Selection and Training	1—C	CONFERENCE covering: The selection and training of drivers of wheeled vehicles. Necessary tests, equipment, terrain and time to produce qualified drivers.
Driver Maintenance Procedure	1—C	CONFERENCE covering: First echelon maintenance responsibilities as required of the wheeled vehicle driver. Before-operation, during-operation, at-the-halt and after operation checks.

Part III—Command Support, Supervision and Inspection

Establishment of the Preventive Maintenance Program	1—C	CONFERENCE covering: Establishment of the preventive maintenance program. Preventive maintenance directive. Command support and supervision.
Vehicle Inspections	4—C, D, PE	CONFERENCE, DEMONSTRATION and PRACTICAL EXERCISE covering: The purpose and types of wheeled and tracked vehicle inspections. Scheduling of inspections. Inspection of administration and control. Use of Preventive Maintenance Indicator technique. Recording and evaluation of inspection results.

Oil should be clean and at the proper level.



Is clutch "free travel" within proper limits?

Part III—Command Support, Supervision and Inspection (Cont.)

Subject and References	Hours and Type of Instruction	Scope of Instruction
Unit and Ordnance Supply Systems	1—C	CONFERENCE covering: Unit and Ordnance supply systems. Stock level basis. Usage factors. Direct exchange. Anticipation of requirements.
Examination	As desired	

Flexible

The course, a suggested one, is easily modified to meet your immediate requirements. It can be shortened or lengthened by varying the time spent on practical exercises, by substituting or deleting

A commander's inspection includes on-vehicle tools and publications.[1]

training films, or by altering the time devoted to vehicle inspections. The scope of various hours may be changed by the commander to emphasize problems and areas that require special emphasis peculiar to his unit. The examination is optional.

Training Aids

The training aids listed are limited to those available to a unit in the field. The forms, records and sample examination are, essentially, reference data. Along this line, we have included all available material pertaining to a specific subject as well as a detailed guide for the instructor.

Material not too Technical

In preparing this training program[2]— we remembered that it was beamed at an audience of commanders, not technicians. For this reason, the material is basic from a technical standpoint. Our goal

[1]The publications that should be on the vehicle are: 1. Lubrication Order—LC 19-75-AAA-4 truck, ¼ ton, 4 x 4 utility M38A1, Form No 9-8048; 2. TM 9-804A, ¼ ton, 4 x 4 utility truck, M38A1; 3. TM 21-305, Drivers Manual; 4. Operator Report of Motor Vehicle Accident (Standard Form 91); 5. Accident Identification Card (DD518), and 6. Post Traffic Regulations.

TO "KEEP 'EM ROLLING" is a problem faced by many commanders. In his article, COLONEL HOLMAN, Director of the Automotive Department, The Infantry School, discusses a subject of tremendous importance in these days of mobile warfare.

The author's solution to the vehicle maintenance problems facing commanders is based on his experience as a battalion and regimental commander, and as G-4 of the IX Corps in Korea.

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was to provide the officer-inspector with sufficient know-how to conduct a realistic inspection and still remain in a class A uniform. The object is to teach him what to look for—so that he can honestly appraise the execution of a preventive maintenance program.

By recognizing a few preventive maintenance "indicators," the average commander can, by checking a few points on a vehicle, determine the quality of maintenance being performed.

We feel this training program is an answer to your maintenance problems, not necessarily the answer. We know it can greatly assist commanders. However, we would like to have your thoughts on possible deletions, additions, or areas requiring special emphasis. Send your ideas to: The Commandant, The Infantry School, Fort Benning, Georgia, Attn: Director, Automotive Department . . . and don't pull your punches. Remember, our mission is to help commanders **Keep 'Em Rolling.**

What's For Chow?

"What's for chow?" is very likely the question heard most frequently in the army. It is a good question, because soldiers who do not eat well seldom win battles. Napoleon knew this when he said that his army marched on its stomach. Our leaders today also realize this truth.

The Infantryman of 1955 is far more fortunate than his forefathers of 1776. The Continental soldier was given a fixed ration every day, which he had to cook and prepare himself. He received daily a pound of beef or ¾ of a pound of pork, a pound of bread or flour, about ½ pint of peas or beans, a pint of milk and a quart of beer or cider. In addition, he was issued a certain amount of rice and molasses every week.

As the years went by the rations changed. Beer disappeared from the soldier's menu, hardtack came and went, while sugar was added. By the time of the Spanish-American War, army cooks were providing a much more palatable and balanced diet. It was at this time that the first combat rations, the ancestor of our Assault Rations, made their appearance. They consisted of powdered beef, wheat that had been cooked and dried and sweetened chocolate.

It was not until World War I, however, that the U. S. Infantryman began to get some real relief from his Spartan diet of the past. Sweet potatoes, prunes, coffee, butter and many other items were added to the rations. Our army chow became the best in the world; and foraging for food in the countryside, not uncommon during the Civil War, was a thing of the past.

When today's Infantryman asks, "What's for chow?" the answer will almost always be pleasant. But the modern military menu of the U. S. Army is not only tasty; it is fuel that keeps the soldier in fighting fitness.—Mr. Norman S. Poser

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[2]"The Commander's Automotive Preventive Maintenance Training Program" ($1.50) can be purchased from: The Book Department, The Infantry School, Fort Benning, Georgia.

Voice of the Infantry

It fred wilmot

THE crack of rifle fire, the rattle of the light machine gun, and the cry of the bayonet charge—these have long been the voices of the Infantry. Today the Infantryman has another voice—an articulate voice to exploit and enhance the effect of his hardware weapons. It is the voice of the combat loudspeaker.

In Korea, the loudspeaker proved its value to the Infantry time and again. During the early stage of the war, when our troops were continuously fighting a battle of maneuver and withdrawal, prisoners for "S2" interrogation were extremely hard to obtain.

In the first month of the war, the 24th Division used public address systems to provide verbal support to the fire power of their weapons. Even with this makeshift equipment and trial-and-error propaganda, some enemy soldiers were convinced that they should surrender.

Officers of the 1st Cavalary Division, realizing the potential of tactical propaganda but unable to acquire loudspeaker support, directed a cooperative prisoner of war who had received good treatment in their hands to shout back to his unconvinced comrades to prevail upon them to surrender. This method was at least partially successful.

These early attempts at tactical propaganda succeeded in saving lives and materiel which would have been expended in securing prisoners for interrogation and in the reduction of enemy positions. Today, officers and men trained in the techniques of tactical propaganda and assigned to the army's loudspeaker and leaflet companies perform this mission in support of Infantry units. In addition to ground loudspeaker support, airborne loudspeaker missions are flown at the request of Infantry unit commanders. The commander can request this support from his corps psychological warfare officer by using G3 channels.

The success of tactical loudspeaker propaganda depends, to a large degree, upon its integration with the combat situation. Its result, like the result of most weapons, is most spectacular when the enemy is hard pressed. When he finds himself in an untenable situation—or even in a situation in which he is denied warmth, food and rest—the enemy may stay and fight to the last, if attacked only with fire power. But given a chance to surrender and assured of good treatment, the enemy will often choose life in a POW enclosure rather than risk death.

This became apparent during the April '51 U.N. offensive in Korea.

Very frequently lives, time and materiel were saved by the judicious use of loudspeaker propaganda supporting superior U.N. fire power during this attack phase of the war. The most successful of these missions were those which were closely coordinated with Infantry, artillery and air fire power.

loudspeaker broadcasts. Many of these surrenders must, of course, be attributed to the attack situation and the utterly untenable situation in which the enemy often found himself. However, tactical loudspeaker propaganda undoubtedly contributed substantially to the advance of this division.

Loudspeaker propaganda attrition campaigns are seldom spectacular, but

. . . like any weapon, the tactical loudspeaker's only reason for being - is to support the combat Infantryman

For example, when U.N. troops encountered stubborn resistance, all available fire power was placed on some terrain feature, easily discernible by the entrenched enemy. The supporting loudspeaker team then went into action, pointing out the fire power that would be directed upon them if they did not surrender. Enemy soldiers who did surrender were then used to convince their comrades that the promised good treatment was a reality.

If resistance still remained, coordinated fires were placed on the enemy position for a determined period, and the loudspeaker appeal was repeated, usually with marked success.

Many large groups of enemy surrendered during the months of April, May and June of 1951. The 24th Division captured some prisoners during the month of June by using a series of ground

they may lead the enemy to use defensive tactics which inhibit the consolidation of his gains and decrease his attack potential. In February 1952, the 1st Marine Division, using loudspeakers, was receiving from 5 to 20 surrenders per day. It is logical to assume that there was some relation between the large number of deserters from the North Korean Corps and its replacement.

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LT. FRED W. WILMOT. The psychology of warfare now includes the use of Psychological Warfare. Thus, we fight twin battles — one physical, the other mental. Lt. Fred W. Wilmot, graduate and former instructor at the Psychological Warfare School at Fort Bragg, explains the practical application of Psychological Warfare weapons. He performed intelligence and reconnaissance duties in Europe during World War II, and served in Korea as Psychological Warfare Officer of the 1st Loudspeaker and Leaflet Company.

Results of loudspeaker broadcasts are not always so immediate. Infantry units being supported by loudspeakers for the first time tend to chalk up missions as failures when they do not immediately secure prisoners. But when enemy prisoners start coming in several days later, there is every reason to believe that they are at least partly influenced by the loudspeakers.

The mobility of the airborne loudspeaker makes it extremely useful to the Infantry. The decision to use airborne loudspeaker support is always made by the Infantry unit commander. He can call for psychological warfare support in the same way he calls for artillery or tank support. Requests for voice aircraft support can often be filled in less than two hours, depending upon communication facilities and availability of aircraft. Most airborne loudspeaker missions in Korea were coordinated in the following manner: the Infantry unit commander who desired airborne loudspeaker support contacted his corps psychological warfare officer through G3 channels. The corps psychological warfare officer then arranged the mission with the army psychological warfare officer. Army Psy War in turn contacted the plane in flight and directed it over the corps area. At this point, division liaison aircraft made contact wtih the voice aircraft and with the Infantry forward air controller.

This communication arrangement provided excellent control over the voice aircraft and the ground fire of friendly units. (When possible, all ground fire should be stopped while the voice aircraft broadcasts to the enemy position.) The job of the voice aircraft is to convince the enemy that his position is hopeless, that his only chance for survival is surrender, and that surrender will be accepted if the enemy troops approach our position with arms in the air or under a white flag. It is extremely important that friendly troops be briefed by unit commanders on instructions given enemy troops for surrender. There were instances in Korea where missions of this kind were foiled by one soldier with a nervous trigger finger.

The loudspeakers were extremely successful in fast-moving situations where it was necessary to neutralize enemy road blocks in small enemy strong points. But not all airborne loudspeaker missions in support of the Infantry are conducted against enemy troops. Many examples from Korea show that the airborne speaker can be of great use to the Infantry in clearing supply routes clogged with civilian refugees and in dispersing civilians who remain in enemy-occupied villages and combat areas.

Infantry units are frequently called upon to perform guerrilla mop-up mis-

Little Rollo has no use for *The Infantry School Quarterly* . . . . Strictly a Navy type. But for soldiers of all sizes, from sixteen to sixty, the Quarterly makes the **perfect** birthday gift.

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sions. In Korea, where such missions occurred with monotonous regularity, both ground and airborne loudspeakers were used with considerable success to aid ground troops in neutralizing these guerrilla forces. During the months of December 1951 and January 1952, loudspeakers operating in support of mop-up operations helped convince hundreds of guerrillas that they were fighting a lost cause. Perhaps even a more lucrative audience for loudspeaker propaganda in guerrilla operations is the civilian population in the target area. Guerrilla forces cannot sustain themselves logistically for long periods without the support of the civilian population.

If, through the medium of the loudspeaker, the civilian population can be convinced that they should not cooperate with the guerrilla forces and will receive our protection if they do not cooperate with them, the job of the anti-guerrilla forces is made much easier. Such loudspeaker operations were effective during the anti-guerrilla operations in Korea's North Challa Province.

Besides their assigned missions, voice aircraft sometimes found "targets of opportunity," which—though quite unorthodox as psychological warfare—were definitely helpful to the ground troops they supported. On one occaison, the voice aircraft's mission, in support of an airborne landing, was to create confusion in the enemy's reserve area. During this operation, a troop-loaded C-119 was forced to make a crash landing behind enemy lines. Briefed by ground troops communicating with the voice aircraft through its SCR 300 radio, the plane guided the crashed personnel to a point where they were rescued by helicopter.

The value of a weapon is proved only after its successful operation in combat. The loudspeaker, the new voice of the Infantry, has earned its place in the Infantry's already impressive arsenal. Like all weapons, its only excuse for existence is to support the combat Infantryman.

Here, in the loudspeaker, is the Infantryman's chance to close with the enemy in a new and devastating way. Used wisely, the tactical loudspeaker is capable of saving valuable time, materiel —and lives.

SPOTTED A MISTAKE?

Tell us about it! We invite comments, criticisms, suggestions. Let us know how we can help you. Of course, if you like the *Quarterly* as is, we'd like to hear about that, too!

THE NIGHT HAS EYES

by Maj J. R. Darden and
Lt T. R. Sobieski

AN enemy patrol moves, silent and unseen, toward your position. You stare out into the liquid blackness that surrounds you. You think you sense the presence of the enemy. Nerves? You're not certain — you can't see.

Someone near you squeezes a trigger. The sharp crack of a carbine breaks the stillness. You hear a body fall—and clatter of the unseen enemy racing away.

It doesn't take much imagination to picture the enemy patrol leader reporting that he was ambushed — reporting that the night, quite literally, was possessed with eyes.

This was no lucky "one in a million shot" that was fired from your bunker — it was a well-aimed shot! A shot fired from a carbine, mounted with a night firing sight — a sniperscope.

This is not an isolated example. The sniperscope has proven that it can be an invaluable asset to Infantrymen. One difficulty is the fact that too few Infantrymen have ever seen or used these "night eyes." But you can wager that before too long there is going to be

greater emphasis placed on training each Infantryman in the use of the sniperscope (see Figure 1).

The object of this article is to provide you with a suggested sniperscope training program that will be of considerable assistance to your unit.

Location. Information presently available indicates that few Infantrymen know where all the sniperscopes in an Infantry regiment are located or how many are available. As a point of departure, let's see what we have and where these are located.

An examination of T/O&E 7-11 reveals that we are authorized 53 sniperscopes, Infrared Set #1, 20,000 volts. These are distributed as follows:

Unit	No.	Total
(1) Each rifle company	3	27
(2) Each heavy weapons company	2	6
(3) Each battalion headquarters	5	15
(4) Heavy mortar company	2	2
(5) Regimental headquarters company	3	3
		53

Pooling. To train your men adequately it will be necessary to pool these sniperscopes. When this is done, a rifle company can be fired on an appropriate range in one night.

Preparation for Instruction. We will assume that you plan to train your men by company. To provide adequate instruction for a group of this size — you will need one officer (principal in-

Figure 1. Sniperscope Infrared Set No. 1 (20,000 volts)

[1]It is suggested that the sniperscopes used for classwork not be used on the range. This will insure that the sniperscopes used on the range will always be in condition for use.

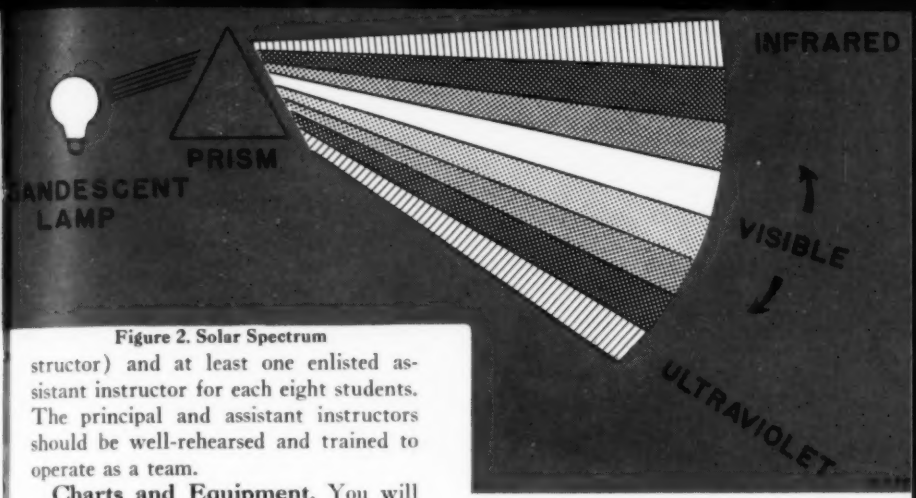

Figure 2. Solar Spectrum

structor) and at least one enlisted assistant instructor for each eight students. The principal and assistant instructors should be well-rehearsed and trained to operate as a team.

Charts and Equipment. You will need blown-up versions of Figures 2 through 5 shown in this article. These can be enlarged by use of the Vu-graph machine or an opaque projector such as the Baloptican.

The required equipment is 25 carbines, M-2 modified, 25 sniperscopes[1], 25 sets of sniperscope tools[2], 25 large mess hall tables, 200 folding chairs, 25 notched boxes to hold carbines and one package of lens tissue (Part No. D-5637565 Filtrator Lens Tissue). The carbine boxes are an expedient. They are empty .30 caliber ammunition boxes that have been notched to hold the carbine (see Figure 6). The cover is bolted to the bottom of the box to permit rotation. This "lazy susan" effect enables the assistant instructor to make certain that each student sees the various parts of the sniperscope as they are discussed.

Outline of Conference — Demonstrations. 1st period (50 minutes). The detailed material for this conference is found in TM 5-9342, pars. 3a, d, e, 4b, 5a, b, c, d, e, 11a, FM 21-75, C3, pars. 88-96.

Outline of Conference

I. Introduction .....(15 min)
   a. Need for equipment in night combat.
   b. Theory of Infrared (Solar Spectrum Chart).
   c. Functioning (Chart on Functioning).
II. Principle Component Parts .....(10 min)
   a. Removal of equipment from chest.
   b. Set of tools.
   c. Light source and telescope.
III. Assembly of Sniperscope .(10 min)
   a. Modification of carbine.
   b. Mounting of the sniperscope.
IV. Testing Equipment .....(10 min)
V. Precautions to be Observed (Safety Precautions, TM 5-9342, Page v) —(5 min)

2d Period (50 minutes). The detailed reference material for this conference is found in TM 5-9342, pars. 5f, g, 6, 8, 9-12, 20, 21, 25-27, 14; FM 21-75, C3, pars. 88-96.

Outline of Conference

I. Introduction .....(10 min)
II. Placing Sniperscope into Operation .....(5 min)
III. Adjustment of the Sniperscope .....(15 min)
   a. Light source.
   b. Azimuth.
   c. Reticle.

[2]Close Quarter Screwdriver, Stock No. 41-7156.175-030, Gimlet and Counterbore, Stock No. 18-3890.500-30, Mounting Tool, Stock No. 18-4930.500-200, Combination Wrench (no stock number). Reference TM 5-9342, pages 38-39.

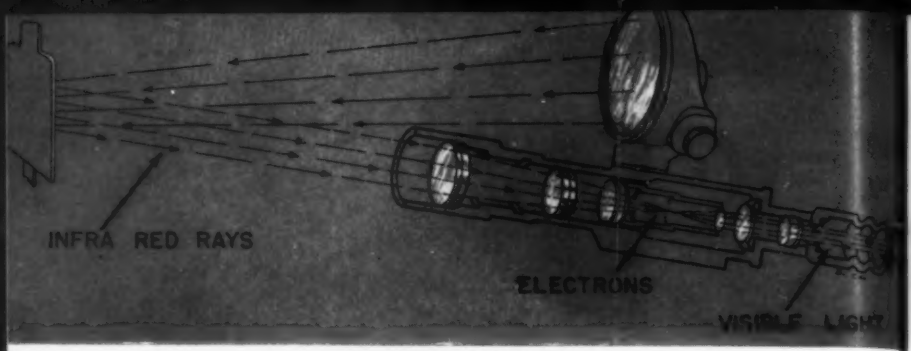

Figure 3. Functioning

d. Focus.
e. Brightness of reticle.
f. Sight picture (show chart).

IV. Inspection of Equipment . . (5 min)
a. Before operation.
b. During operation.
c. After operation.

V. User Maintenance . . . . . (10 min)
a. Light source.
b. Reticle bulb.
c. Man power cable.

VI. Preparing Sniperscope for Storage . . . . . (5 min)
a. Dismounting from carbine.
b. Packing in chest.

The two periods we have just discussed are considered the minimum required for familiarization with the equipment. You may want to expand them to meet the needs of your unit. In any case, after the last period, each man should be able to change the light and reticle bulbs, the battery and the power pack fuses under conditions simulating darkness. Your men should also be familiar with the tools necessary to perform user maintenance.

3d Period (50 minutes). Reference: See Figure 4, 125 yd Zero Chart, DA Training Circular 19, May 1952.

Zeroing Period [3] (50 minutes).

Outline of Conference

I. Introduction . . . . . (5 min)
II. Field Expedient Method (Range 25 yds) . . . . . (20 min)
(a) Chart, T.C. #19, May 1952.
(b) Practical work.

III. Effective Range Method (100 yds.) . . . . . (25 min)
(a) Use "E" type silhouette on pole.
(b) Fire and adjust for elevation and deflection.
(c) Adjust light source.
(Both methods at night only.)

The student should use the tools from the set when needed and make required elevation and azimuth adjustments. The light source, however, can be set only during hours of darkness.

4th Period. Reference: FM 21-75, C3, pars. 88-96.

Night Firing. This period is designed to demonstrate the accuracy of weapons with the sniperscope mounted as a night sight and convince firers that, with it, they can see objects clearly at night.

We feel that a range setup (as shown in Figure 6) is best for use with this period. As indicated, a county fair system consisting of three stations (depending on available equipment) is suggested. If searchlights are available, a fourth station such as the one shown in Figure 6 may be established.[4]

Using only T/O&E equipment of the Infantry regiment, the three stations might operate as follows:

Station 1—Firing line.

[3]During daylight hours a circular cardboard cover with a small slit in the center is placed over the front of the telescope. Zeroing in daylight does not allow use of an integral light source. We recommend that zeroing be done at night, eliminating the cardboard disc and allowing the student to realize fully the capabilities of the sniperscope at night.

At Station 1, coach and firer adjust the light source of the sniperscope on a point target at a distance of 100 to 125 yards. All firers should be given the opportunity to view other infrared lights through their viewers. For example: flashlights, equipped with infrared filters, can be tied to long poles and held up from the pits for this purpose.

Each firer should have a chance to view the illumination of a single sniperscope lamp. He should then be given the opportunity to see the increased illumination obtained when all lamps are turned on at the same time. Suggested targets for night firing are the "E" type silhouettes mounted on long poles. (To indicate a hit — spin and drop targets.)

Station 2—Review functioning of sniperscope. Cover possible tactical uses.

Station 3—Metascope US/F and the TC-122 flashlight with infrared filter. Practical work in the use of the metascope.

We suggest that you divide your unit into equal groups of men corresponding to the number of stations you elect to set up. The amount of time spent at Stations 2 and 3 will depend upon the length of time taken to run each order through the firing line (station 1).

When the night firing problem is finished, training of the sniperscope operator is complete. Don't be misled into believing the soldier thus trained is an expert. He is not . . . but he has received sufficient training and has done enough practical work to enable him to maintain and use the sniperscope. To maintain any degree of proficiency, refresher courses must be given periodically.

Maintenance. The maintenance of sniperscopes is by no means last in order of importance. For purposes of emphasis, however, we felt it wise to bring up this matter after our discussion of the training program.

Sniperscope maintenance presents no real problem. They can be placed under

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Lt Sobieski received his commission from the University of Connecticut where he was a Distinguished Military Graduate. He served with the 3d Division, as did Major Darden, in FECOM. Both authors are instructors in the Weapons Department, TIS.

Figure 4. Sight Picture

[4]Station 1—Recommend using every other firing point to assist in control at night. Station 4—Searchlight station can be set up on any terrain 400 to 500 yards in length.

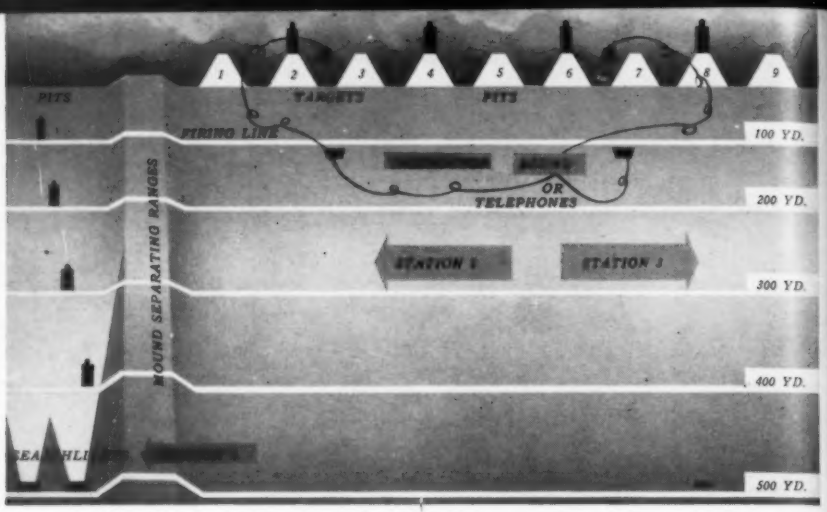

Figure 6. Range Suggested for Sniperscope Training

the care of the radio-trained personnel in the communications section of each battalion and at regiment. Battery maintenance and charging can be accomplished at battalion and regiment. This is relatively easy, since one battery charging rack, capable of charging 12 batteries simultaneously, is found in each battalion headquarters and in regimental headquarters company.

Whether you elect to start sniperscope training on your own, or suddenly find that you've been directed to do so, we feel that this suggested program will prove to be the answer to your problem.

With the ever increasing emphasis now being placed on night training, it's time we all recognized that the night has eyes — the eyes of the man with the sniperscope!

Figure 5. Zeroing